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ABSTRACT

This monograph provides an analytical comparison of the background and evaluation of apprenticeship in the eight European countries of Austria, Czechoslovakia, Denmark, France, The Federal Republic of Germany, the Netherlands, Switzerland, and the United Kingdom. Its primary purpose is to determine how the rules and conditions of apprenticeship have been and are likely to be influenced by rapid technical development and how training has been adapted to changing conditions of work. The basic patterns of the institutions of apprenticeship in these countries are all highly traditional in their general structure. Some of the laws and regulations which today govern the relationship between master and apprentice date back to the second half of the 19th century. However, some of the changes introduced may have been revolutionary in the country concerned. The adoption of day-time related instruction in Denmark, the extension of apprenticeship to the industrial and commercial fields in the Netherlands, the new powers given to public authorities and the introduction of a levy system in the United Kingdom have all constituted profound changes in the national pattern of training. (HC)

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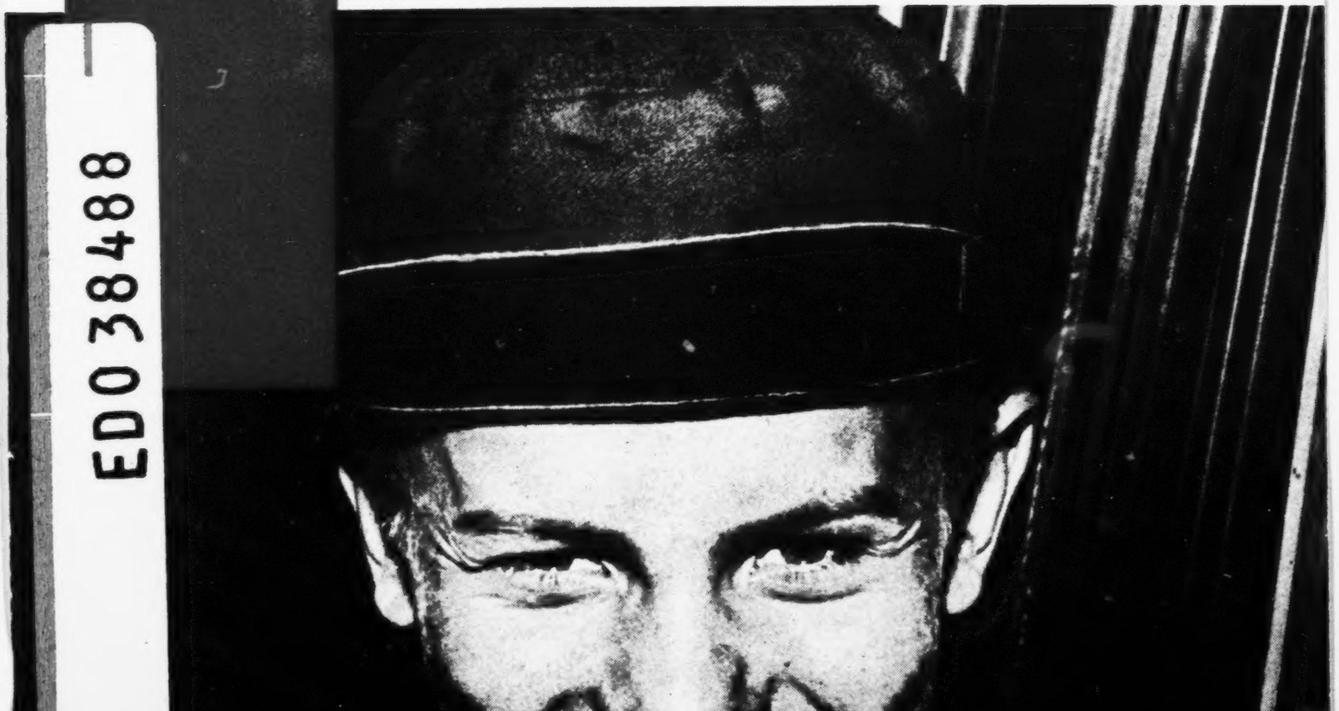

EUROPEAN APPRENTICESHIP

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European Apprenticeship

Three million apprentices are today receiving training in thousands of industrial, artisan and commercial undertakings in the eight countries covered by this study:

Austria
Czechoslovakia
Denmark
France
Germany (Federal Republic)
Netherlands
Switzerland
United Kingdom

It was carried out by a team of research workers of the Human Resources Department of the International Labour Office, on a research grant from the Manpower Administration, Office of Manpower, Automation and Training, United States Department of Labor.

Contents of this monograph

This monograph provides an analytical comparison of the background and evolution of apprenticeship in the eight countries: the organisation of practical training in centres, undertakings and schools; the dual role of apprenticeship as a line of preparation for entry into skilled work and as a stream of education; the administrative machinery of apprenticeship and the distribution of administrative and financial responsibility for it. It concludes with a discussion of the need for modifications in the existing systems under the influence of the accelerated technical change and educational explosion of today.

The cover

At 15 it is good to hear the foreman say:
— Fine, that's craftsman level.

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EUROPEAN APPRENTICESHIP,

Effects of educational, social and technical development
on apprentice training practices in eight countries .

Second edition

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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TABLE OF CONTENTS

Page

PREFACE 7

CHAPTER I - PATTERNS OF APPRENTICESHIP 9
- Common traits and characteristic differences 13
- The educational background of apprentices 22
- Expansion 26
- Girls in apprenticeship 31
- The way into apprenticeship 33
- Drop-out rates 38
- Full-time courses in vocational schools 39

CHAPTER II - THE ORGANISATION OF TRAINING 44
- Apprenticeable trades 44
- "Artisan" trades 46
- Industrial and commercial trades and occupations 49
- How trade lists have changed 50
- Why the trade lists change 54
- Duration of training 56
- Distribution between sectors of economic activity 61
- Distribution between trades 70

CHAPTER III - THE ORGANISATION OF INSTRUCTION 74
- Scope and content of training regulations 75
- Dual relationships: training - production
  theory - practice 79
- Day release and block release 88
- Practical training in the undertaking 93
- Teaching staff 99
- Supervision and control of training 103
- The apprenticeship co-ordinator 104

CHAPTER IV - TRADE EXAMINATIONS 110
- Types and levels of examination 111
- How trade examinations are organised 115
- Duration, place and technical content of trade tests 118
- The pass mark and the second try 119
- Adaptation to changing requirements 120

CHAPTER V - THE ADMINISTRATIVE FRAMEWORK OF APPRENTICESHIP 130
- Apprenticeship legislation 130
- Nature and content of the indenture 131
- Contracting parties and registration of indentures 133

Page

Termination of the contract 136
Obligations of employers and apprentices 140
Administrative machinery 142

CHAPTER VI - COSTS AND FINANCING 158

Overhead costs 159
Financing related instruction and other in-school training 165
Voluntary contributions 169
Grants to trainees 170
When does an apprentice start to pay his way? 172
Who pays for training? 177

CHAPTER VII - SUMMING UP: SYSTEMS IN TRANSITION 179

There was room for rationalisation 183
Spontaneous promotion and partnership 184
Future change will require reorganisation 187
What may have to be done 191

NOTES AND REFERENCES 199

LEGISLATIVE TEXTS CONCERNING APPRENTICESHIP AND VOCATIONAL TRAINING 213

THE ILO VOCATIONAL TRAINING RECOMMENDATION, 1962 222

STATISTICAL SOURCES 226

BIBLIOGRAPHY 231

LIST OF TABLES

1. Federal Republic of Germany - Percentage of young school leavers (under 18 years of age) taking up employment 26

2. Austria - Trends in apprenticeship, by major sector, from 1950 to 1963 63

3. Federal Republic of Germany - Employment of apprentices and learners, by major economic sector, from 1950 to 1963 63

4. Denmark - New contracts registered in 1956 and 1962 62

5. Denmark - New contracts registered in retailing and office occupations in 1956 and 1962 64

Page

6. Federal Republic of Germany (including West Berlin) - Distribution of industrial apprentices (excluding learner trades) by branch of economic activity 67
7. Switzerland - Number of apprentices in the major sectors of economic activity in 1963 69
8. Great Britain - New apprenticeship contracts in the major sectors of economic activity in 1963 69
9. France - The 10 trades employing the greatest number of apprentices in 1963-64 70
10. Federal Republic of Germany - Number of apprentices in 11 industrial and commercial trades in 1962 72
11. Federal Republic of Germany - Number of apprentices in 11 apprenticeable trades in the artisan trades in 1961 72
12. Denmark - Related instruction syllabus for automobile mechanics: comparison of evening and day-time classes 85
13. Czechoslovakia - Practical and theoretical instruction for fitter-assemblers (3-year apprenticeship) 86
14. Netherlands - Training syllabus, instrument mechanics 87
15. Netherlands - Syllabus of related instruction, instrument mechanics 87
16. Denmark - Related theoretical instruction for radio mechanics 89
17. Federal Republic of Germany - Time spent by apprentices in training workshops 96
18. Austria - Percentage of passes in journeyman examinations in 5 major economic sectors, 1957-1962 126

LIST OF CHARTS

1. The compulsory school period 23
2. Minimum age for entry into apprenticeship and secondary education 24

Page

3. Austria - decreasing generations of youth caused a drop in enrolment 29
4. Federal Republic of Germany - an increasing number of offers of training places remain unfilled 29
5. Netherlands - rapidly increasing enrolment (1945-1964) 30
6. Denmark and Switzerland - rapid increase followed by stabilisation 30
7. Czechoslovakia - Extracts from previous and current trade lists showing changes introduced in 1958 53
8. Minimum and maximum periods of apprenticeship 59
9. Czechoslovakia - Distribution of 324,800 apprentices by field of economic activity (1963) 65
10. Federal Republic of Germany - Percentage change in the number of apprentices by branch of industry 1958-1962 66

PREFACE

This study of contemporary European apprenticeship practices is concerned with training in undertakings, regulated by a contract of apprenticeship (indenture) and supplemented by related instruction at school. It was made possible by a research grant from the Manpower Administration, Office of Manpower, Automation and Training (OMAT) of the United States Department of Labor.[1)]

It is a survey of the most important institutions and post-war trends in the apprenticeship systems of eight European countries - Austria, Czechoslovakia, Denmark, France, the Federal Republic of Germany, the Netherlands, Switzerland and the United Kingdom - and of the rules and conditions applying to the training of more than three million boys and girls. Its primary purpose is to determine how these rules have been and are likely to be influenced by rapid technical development, and how training has been adapted to changing conditions of work.[2)]

From the very beginning of the project right through to its completion, CIRF has been greatly assisted by the national authorities concerned, and by many training specialists and public and private bodies responsible for vocational training in schools and in apprenticeship in the eight countries covered by the survey. To each of them CIRF wishes to express here its most sincere thanks.

The study was carried out by a team of research workers attached to CIRF and to other branches of the Human Resources Department of the ILO, under the main responsibility of Dr. Karl H. Ebel and Dr. Jacques Monat. The final text was written by Angela Butler and by Sven Grabe who is responsible for the opinions expressed in this paper.

Preface to the second printing

This second printing of the English edition of this monograph has been made necessary by the rapid sale of the limited initial printing (2,000 copies). Only minor changes have been made in the text: mainly corrections of printing errors and minor adjustments to bring the English edition into line with the German and French texts which were published subsequently.

The proposed new legislation in France has not been taken into account as at the time the monograph was prepared for the printer, no final decision had yet been taken by Parliament. The provisions of the new apprenticeship Act in the Netherlands (1966) have, on the other hand, been incorporated in the text in so far as they constitute a change in previous practices.

CHAPTER I - PATTERNS OF APPRENTICESHIP

A hundred years ago the firm traditions and the structured and controlled training systems of the European guilds had broken down as a result of industrialisation and the liberalisation of trade. Training in the crafts was disorganised; in industry and commerce it was left to chance and paternal tradition. Shortages of skilled workers had developed as a result of neglect of training and of emigration overseas.

This is the climate in which the reform movement started and the fundamental structure of modern apprenticeship began to take shape. Earlier regulations were reintroduced or revised, and new provisions were added in the second half of the 19th century. The first major break-through took place in the period of social and educational reform following the first world war when new apprenticeship legislation was adopted in most countries.1)

Quantitative expansion was hampered by the economic depressions of the 1920's and 1930's. In some countries there was a decline towards the end of this period. Training in undertakings proved insufficient for meeting the needs of skilled workers as pre-war economic expansion gained momentum. Vocational training in schools became the principal means of providing trained personnel in many countries.2)

The long and steady economic expansion which began after the second world war gave new impetus to the development of apprenticeship. Skilled worker shortages developed in most European countries, largely as a result of increasing demand. Rising income made it possible for parents and youth to forego the short-term advantage of taking up jobs without training directly after leaving school. Training in full-time vocational courses was criticised as being too far removed from industrial requirements; moreover, school facilities could not be expanded rapidly enough to cope with the steeply rising demand. The national systems of youth protection were further developed and the employment of adolescents became increasingly circumscribed. 3)

Gradually a new concept of apprenticeship was formed. The basic elements of this concept may be summarised in the following points.

1. The transition of adolescents from full-time education to adult work should, whenever possible, be organised as a period of training in employment.

2. There should be special legislation and for each major trade and occupation detailed regulations to determine the relations between adolescent workers and their employers and the standards to be attained in training.

3. Public authorities, working in close co-operation with employers' and workers' organisations, or semi-public bodies

composed of representatives of industry and the trades, should supervise and control the implementation of these regulations.

4. Training should include both theoretical and practical instruction and should be provided within the hours of a normal working week.

Many of the principles of modern apprenticeship were already applied in the period between the two world wars. What is new is that they have gained universal acceptance and that quantitative expansion of apprenticeship has made them applicable to a rapidly growing proportion of the adolescents leaving school before the end of secondary education.

This recent expansion in apprenticeship and the concurrent growth of general, commercial, and technical secondary education, together with, in some countries, a similar expansion in full-time vocational training in schools, have given rise to new problems in the organisation and administration of training. The standards and patterns of training which were established before and immediately after the second world war have in many cases proved unsuitable in the present period of accelerated technical and economic change. Basic legislation and the structural organisation of training has been changed in Czechoslovakia, Denmark, France, the Netherlands and Switzerland. Demands for reform have been a subject of sometimes heated political discussion in Austria and Germany. A new industrial training Act, which goes far beyond traditional apprenticeship, has been adopted in the United Kingdom. Other reforms have been introduced by administrative action, by revision of trade lists, training and examination syllabi and courses of related instruction and by improvements in the administrative machinery in all the eight countries.

Despite these frequent and often profound changes in the systems of apprenticeship, a number of problems remain to be solved.

Some of the problems have their origin in technical change. Many trade definitions and training syllabi established in the past have remained unchanged despite changing requirements in industry. Modifications in processes and methods of production have made it difficult to find suitable work for trainees in some industries. Legislation for the protection of youth has further reduced the choice.

Other problems originate in changes in educational patterns. As in-school secondary education expands, so apprenticeship - usually a second or third choice on the preference scale - has to recruit young people with a lower average intelligence. Many school leavers who today take up training for the skilled trades, would previously not have been accepted.

The time available for training is decreasing as the normal working week is shortened and evening courses for related instruction are replaced by day-time classes. In many trades apprentices have to learn more in a shorter period of time. Prolongation of education is upsetting the traditional age pattern in apprenticeship.

There is a growing conflict between the three principal aims of apprenticeship: youth protection, further education and vocational training. The first two lead to expanding the systems so as to take in the vast majority of all school-leaving youth. But numerical expansion may result in lowering standards of achievement. Perhaps the most serious criticisms levelled at the systems of apprenticeship today are that too many young persons are trained in dead-end trades, that the trade structure of apprenticeship is out of step with the changing structure of employment and that too many journeymen are forced out of their trade soon after they graduate. 4)

These are some of the most pressing problems which apprenticeship authorities, employers and unions are tackling today.

Common traits and characteristic differences

European apprentices are, on an average, between 15 and 18 years old. Some of them began training at 14; few started later than 16. Most of them have come from terminal primary education streams or have dropped out of middle or secondary school. By and large, they have had eight or nine years of general education. The period covered by their indenture may vary from one to five years. The median duration is three years, or a little longer. Consequently, the age at which an apprenticeship is completed is usually 18 or 19; in a few cases (for the most part in the United Kingdom) it may be as high as 21; rarely will it be higher.

The number of persons who enter apprenticeship after completing middle school (at age 16 or 17) or secondary education (age 18 or 19) is still insignificant, but nevertheless it is growing. Entrance to some technical institutes and establishments training technicians, technical teachers and technologists requires completed middle or secondary school education and partial or full craftsman training. Banks and insurance companies require some of their apprentices to have had more than a primary education; they often demand, in addition, basic training at a commercial school. The same applies to some other undertakings which employ large numbers of clerical and administrative staff. A few industrial undertakings have set middle-school examinations as a minimum educational requirement for certain highly skilled crafts. 5)

In six of the eight countries - Austria, Czechoslovakia, Denmark, Germany, Switzerland and the United Kingdom - apprenticeship in the traditional, formal sense of training under an indenture within an undertaking, is the principal means of acquiring recognised trade qualifications. Full-time training in vocational schools plays a secondary and, in several cases, an insignificant role in the national system of technical and vocational education and training. In the Netherlands, full-time basic training in a vocational school may partly replace training in apprenticeship. In the eighth country, France, apprenticeship constitutes an independent alternative to full-time training in schools.

Austria, Denmark, Germany and Switzerland have the broadest schemes. Theirs are also the schemes which most closely resemble each other. Apprenticeship may be served in almost all fields of economic activity. In all four countries the majority of young school leavers (i.e. those under 18 years of age) go into apprenticeship and only a relatively small proportion go straight from school into employment without undergoing some form of recognised training. In recent years, the figures for the latter have gradually dropped until they are now lower than 20 per cent of the young school leavers in Germany, 12 per cent in Switzerland, and about 30 per cent of all youth in Austria. Figures for Denmark follow the same trend.

The principal characteristics common to these four systems of apprenticeship are, in the first place, that they represent an on the whole unbroken tradition of apprenticeship as the principal means of providing technical and vocational education; secondly, that by far the greater number of apprentices are trained under a contract of some three to four years' duration; and finally, that related instruction forms a compulsory part of the training. In nearly all cases, apprenticeship is terminated by an examination. All four systems are regulated by detailed administrative rules applying basic apprenticeship legislation; they are administered and controlled by semi-public bodies (Austria and Germany) or public authorities (Denmark and Switzerland) in which the active participation of employers' and workers' organisations is an important factor.

Furthermore, the systems of apprenticeship constitute a separate and largely autonomous part of the educational system. In Germany, and in some cantons of Switzerland, there is a direct link between related instruction for apprentices and part-time continued education for other young people in employment. Attendance at a vocational school, which includes a certain number of hours of instruction in general education subjects, is compulsory for all school leavers up to the age of 18.

Training as a skilled worker also opens the way to many technical institutes and other schools training technicians. In the artisan trades it is the first step towards gaining recognition, after further training, as a mastercraftsman, with the right to set up in independent business.

Apprenticeship in Austria, Germany and Switzerland achieved this dominant position without any legal compulsion - mainly as a result of the spontaneous choice on the part of employers, parents and the young people themselves, the preferential treatment given to apprentices in employment, and the influence of vocational guidance officers, teachers and other persons and bodies concerned. In these countries it has become almost a social convention that youngsters who leave school before the age of 18 should serve under an indenture.

Danish apprenticeship regulations, on the other hand, contain a legal obligation on employers and young people to conclude a contract of apprenticeship in all cases when a young person under 18 years of age is employed on work included in the description of a recognised apprenticeable trade. In view of the parallel development which has taken place in the other three countries, it is debatable whether this legal constraint has had any really important effect on the expansion of the system over the past ten years.[6)]

Apprenticeship in the United Kingdom differs from the four systems just described in mainly three respects. Firstly, the period of training is generally longer and the average apprentice older (in most cases five years of apprenticeship between the ages of 15 and 21);[7)] secondly, the apprenticeship system operates without any legislative framework specifically relating to training under an indenture and without supervision or control by public bodies which, like the contents of the training syllabi, is determined by collective bargaining at the national level. Although most national agreements provide for attendance at courses of related instruction, the provisions are not always enforced. Agreements usually provide for release for one day a week or the equivalent in block release. Finally, an apprentice may complete his apprenticeship and gain full recognition as a skilled worker without having to pass a formal examination.

Apprenticeship in the United Kingdom does, on the other hand, play a considerable role in the training of not only skilled workers but also technicians and other technical staff. The system of technical education is organised so that apprentices may qualify either as skilled craftsmen or as technicians, according to the type of theoretical courses they have taken.

In both France and the Netherlands, apprenticeship has long had a legal framework but was little practised during the period between the two wars. The relevant legislation in France much resembled the legal bases of apprenticeship in Austria, Denmark, Germany and Switzerland, and emphasised training within undertakings as the principal means of vocational training and education and made part-time related instruction and continued education at a vocational school compulsory for all young school leavers below the age of 17.

Shortages of skilled workers during the depression years between the two world wars led the French government to change policy in 1938 and to develop a system of full-time training in vocational schools. This system became the principal method of training skilled workers and other technical staff at corresponding levels. 8)

At the end of the second world war, the birth-rate in France went up considerably. Growing demand for training on the part of both the rapidly expanding French industry and the school leavers made it impossible for the education authorities to accommodate sufficient numbers of trainees in the vocational schools, despite a major effort to multiply the number of classes in public education facilities and the increased support which the public authorities accorded to private vocational schools and company-owned schools. Apprenticeship in undertakings was therefore given new emphasis as an alternative to full-time training in schools. As a result, young people can now acquire skilled worker qualifications in several ways: full-time training in a public vocational school, or full-time training in a private vocational or technical school, or serving an apprenticeship in an undertaking.

Parallel to this growth in industrial training there was an expansion in the traditional and largely autonomous system of apprenticeship in the artisan trades.

Vocational training and education in the Netherlands developed along different lines in the 1920's. Legislation adopted in 1919 provided at one and the same time for training in apprenticeship and for the establishment of junior technical schools (Lagere Technische School - LTS) in which preparatory training in basic crafts (metal trades, woodworking, the building trades, agriculture and home economics) was given in two-year courses for children leaving primary school at the age of 12. Most of the adolescents graduating from these schools at the age of 14 received further training in employment, without any special contractual arrangement or public control, or else took up semi-skilled employment.

The urgent need for rapid industrialisation of what was at the time a predominantly agricultural economy, necessitated the adoption of new policies after the second world war. A joint committee of management and workers, working underground during the war, prepared a blueprint, and work was started on its implementation in the second half of the 1940's. In broad terms, the situation in 1945 was that some 37,000 children between the ages of 12 and 14 were receiving training in junior technical schools and another 5,000 adolescents were serving under a contract of apprenticeship. The two systems of training were, on the whole, unrelated.

The main innovations since the war were that the two systems were joined together and a new administrative structure was built up. To existing regional and municipal apprenticeship committees were added some 40 "foundations" - in principle, one for each major industry - to organise, promote, and supervise training for industry at all levels. These foundations are joint employer-worker agencies operating with government support.

This change in the administrative structure was accompanied by a rapid expansion of both the LTS network and the apprenticeship system. The courses at the LTS were extended. The number of trainees rose rapidly. The LTS now take in about 30 per cent of all school children reaching the end of elementary school at the age of 12 or 13.[9]

A direct relationship has been established between the LTS and apprenticeship. Today, about half of the adolescents graduating from the LTS at the age of 15 or 16 continue their training by serving an apprenticeship lasting two years (in highly skilled trades, three years). Those who opt for continued primary education in the general schools, with a minimum school-leaving age of 14, may subsequently serve an apprenticeship which, in such cases, normally has a duration of three to four years.

Since the second world war the apprenticeship system in Czechoslovakia has passed through two reorganisation phases. Between 1951 and 1958 young people were trained either under indenture in apprentice schools set up and run by undertakings, or in the state labour reserve schools. The latter mainly trained for occupations given priority in the economic plan; the legal status of their trainees was assimilated to that of pupils at government schools. The state labour reserve schools were under the control of the Ministry of Labour. The training of apprentices in undertakings was supervised by the different ministries controlling nationalised industry.

Lack of uniformity and insufficient co-ordination within the system proved detrimental to training efficiency and the level of qualification achieved by trainees. Consequently, the Apprentice Act of 1958 declared an indentured apprenticeship to be the only way for young people to become skilled workers. Undertakings which employ a large number of apprentices establish their own apprentice schools where the young trainees receive both practical and related instruction. Undertakings with few apprentices give them only the required practical instruction, the related theoretical instruction and general education being given them at state-run vocational schools.

The majority of all young people leaving school at the end of compulsory schooling at age 15 (65 per cent) go into apprenticeship. 10)

The educational background of apprentices

Compulsory full-time schooling ranges in duration from 7 to 10 years in the countries covered by this survey (Chart 1, page 23) Beginning at 5 years of age in the United Kingdom, at 6 or 7 in Switzerland (depending on the canton), at 7 in Denmark and at 6 in each of the remaining countries, the compulsory school period is terminated at 14 years in Austria, Denmark, France, the Netherlands and most of the German states and Swiss cantons, and at 15 in Czechoslovakia, in the remaining German states, in most Swiss cantons and in the United Kingdom. A few Swiss cantons have raised the minimum school-leaving age to 16.

The period of compulsory education is being extended in most countries. Prolongation to 15 has been decided in Austria and in the four remaining German states. The governments of France and the United Kingdom - and the authorities in West Berlin - have decided to raise the minimum school-leaving age to 16, with implementation scheduled to take place in the course of the next few years.

Czechoslovakia is the only country following a common basic school system in which all children take the same courses up to the end of the compulsory education period. The school systems of the seven other countries provide for a choice of school streams at a lower age. As shown in Chart 2, page 24, children transfer after 4, 5, 6 or 7 years. The proportion of young people actually so transferring varies considerably from one country

Chart 1 - The compulsory school period

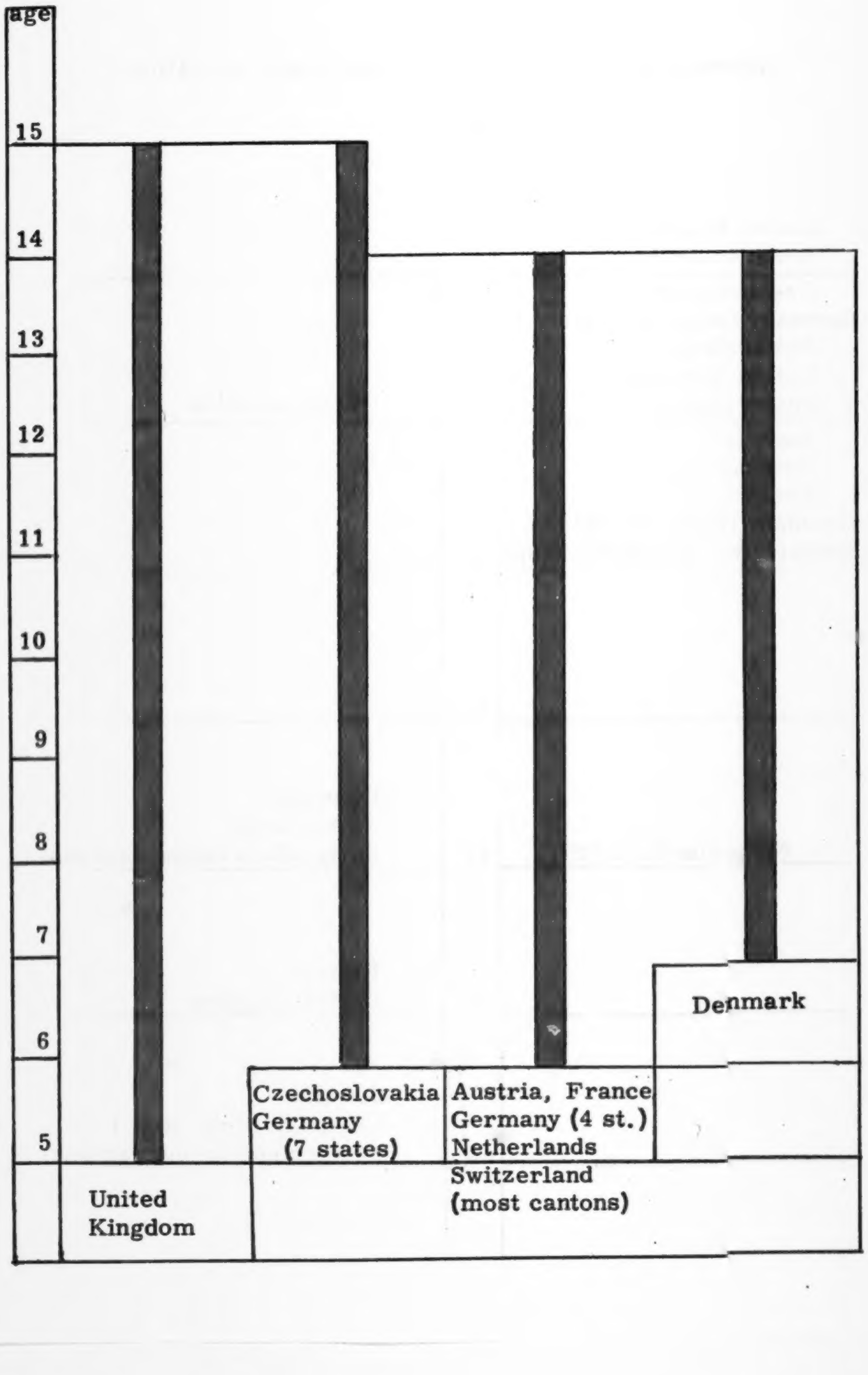


Chart 2 - Minimum age for entry into apprenticeship and secondary education

Apprenticeship	age	Secondary education
United Kingdom (most trades)	16	
Czechoslovakia Germany (some states) Switzerland United Kingdom (some trades)	15	Czechoslovakia
Austria Denmark France Germany (some states) Netherlands (apprenticeship)	14	
	13	
Netherlands (LTS)	12	Denmark Netherlands Switzerland (some cantons)
	11	France United Kingdom
	10	Austria Germany (Fed. Rep.) Switzerland (some cantons)

to another. Those who do not take one of the middle-school or secondary streams offered continue in the terminal classes of primary education until they attain the minimum school-leaving age. In the Netherlands there is the additional option of starting preliminary vocational training at an LTS at the age of 12. 11)

In the past, this early streaming concerned a fairly small group of young people: the middle-schools and secondary education took in only about 5 to 10 per cent of the children. But attendance at these schools has rapidly increased in recent years. In France, close to 50 per cent of all children now go on to secondary schools at the age of 11; in Czechoslovakia, general and technical secondary schools take in around 35 per cent of the adolescents aged 15 to 16; in Denmark 28 per cent, in Germany 25 per cent, in Austria 12 per cent (another 18 per cent of the adolescents aged 15 to 16 go to full-time vocational schools), in the Netherlands 18 per cent and, in Switzerland, 20 per cent of all adolescents are "creamed off" for secondary-school studies before reaching the normal age for entry into apprenticeship. In 1963, less than half of the youth in the United Kingdom took up employment at the minimum school-leaving age of 15 and a total of around 40 per cent remained outside the active labour force beyond the normal age of entry into apprenticeship. The above figures for attendance at middle-school and secondary school show an increase over the past ten years of more than 50 per cent in most countries. 12)

Expansion

Taking 1945, or even 1950, as a base year for statistics, all eight national systems show a marked increase in the number of apprentices over the previous years. More recently, and particularly in the latter half of the 1950's, the rate of increase has diminished, but the general trend has remained constant: middle-school and secondary education and apprenticeship are expanding, while employment without training has been gradually losing ground.

In Germany, where statistics show an absolute decrease in the number of young people going into apprenticeship, the proportion of newly registered apprentices has gone up in relation to the young school leavers taking up employment other than an apprenticeship or learnership (Table 1).

Table 1: Federal Republic of Germany - Percentage of young school leavers (under 18 years of age) taking up employment

Year	Apprenticeship	Other employment
1958	77.5	22.5
1959	79.3	20.7
1960	81.4	18.6
1961	82.3	17.7
1962	82.3	17.7

The decrease in the absolute number of apprentices in Germany is explained largely by demographic change and a prolongation of attendance at school: the exceptionally large generations born between 1935 and 1939 were followed by a post-war slump in the birth-rate; at about the time that these smaller generations reached the age of 14, the period of compulsory schooling was extended from 8 years to 9 years in most German states. As a result, the number of school leavers was reduced from 836,000 in 1951 to just below 600,000 in 1960. It has grown slowly in subsequent years and attained 725,000 in 1964. This rise had not yet substantially influenced the total number of apprentices in 1963. Forecasts made in 1965 by the German authorities give reason to believe that the part played by apprenticeship in the education of youth reached its peak around 1961.[13)]

In Austria, which experienced the same birth-rate fluctuations but which at the same time was able to draw on a larger reserve of young persons going into employment without training, the total number of youngsters in vocational schools and apprenticeship decreased proportionately more slowly that it did in Germany after 1958 (Chart 3, page 29).

The demand for apprentices and the number of training places offered maintained its high level in both countries. The decreases in the number of young persons in training can largely be explained by the drop in the number of children leaving school at the minimum school-leaving age [14)] (Chart 4, page 29).

Less easy to explain is the recent development in the United Kingdom. Here, also, expansion of secondary education and a slight prolongation of the period of compulsory education have decreased the number of 15 year-olds leaving school to take up employment. These developments do not, however, explain why the percentage of school leavers going into apprenticeship and other employment with training increased between 1959 and 1961 but dropped in 1963. The statistics available from the United Kingdom are too scanty and, in particular, the span covered is too short to allow any analysis of these fluctuations. In all likelihood, certain economic factors (among them a drop in the demand for apprentices in several industries which experienced a recession in 1963) are the major reasons for the contraction of apprenticeship intake in the United Kingdom between 1961 and 1963.15)

In all the other countries, the number of apprentices has increased steadily throughout the past decade. In the Netherlands, if 1945 were taken as base year, the expansion has been spectacular: 5,000 apprentices in 1945 and 68,000 in 1963. In Denmark and Switzerland the apprenticeship systems already took in a higher proportion of school leavers even at the beginning of the period under consideration. The rate of growth has consequently been slower 16) (Charts 5 and 6, page 30).

This quantitative expansion of apprenticeship has taken place despite increasing competition from expanding middle-school and general secondary education, and has been larger than the increases in the number of young people attaining apprenticeable age. Consequently, in these three countries most of the increase in apprenticeship may again be attributed to a decrease in the number of young persons willing to take up employment without training.

Chart 3 - Austria: decreasing generations of youth caused a drop in enrolment (index 1950 = 100)

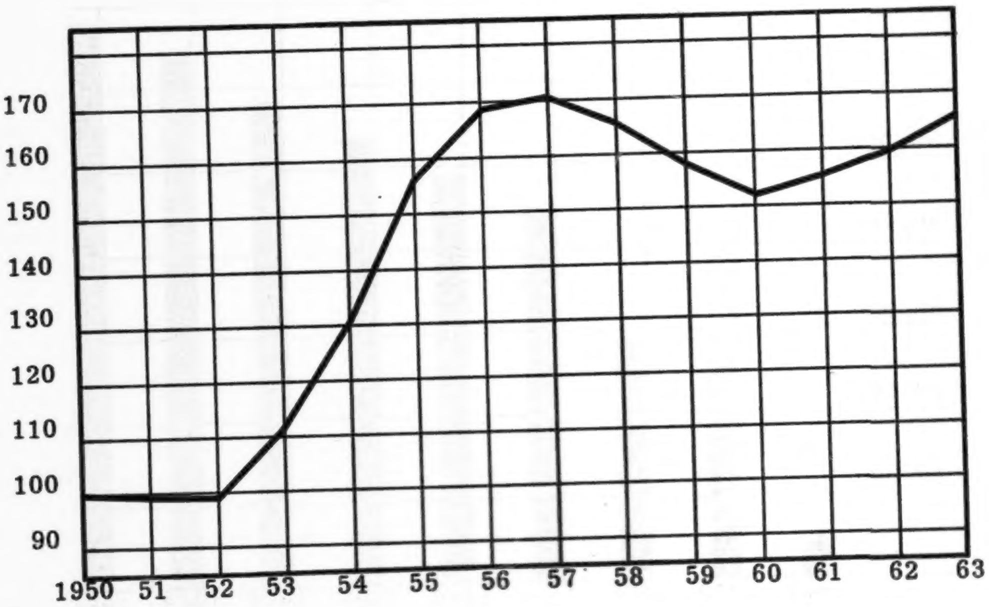


Chart 4 - Federal Republic of Germany: an increasing number of offers of training places remain unfilled (in thousands)

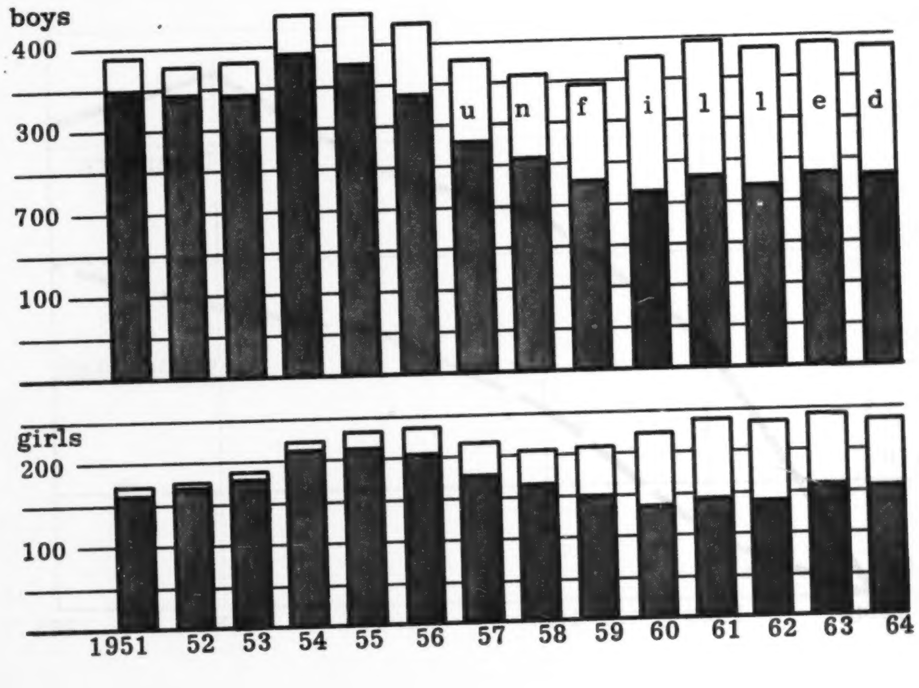


Chart 5 - Netherlands: rapidly increasing enrolment (1945-1964)

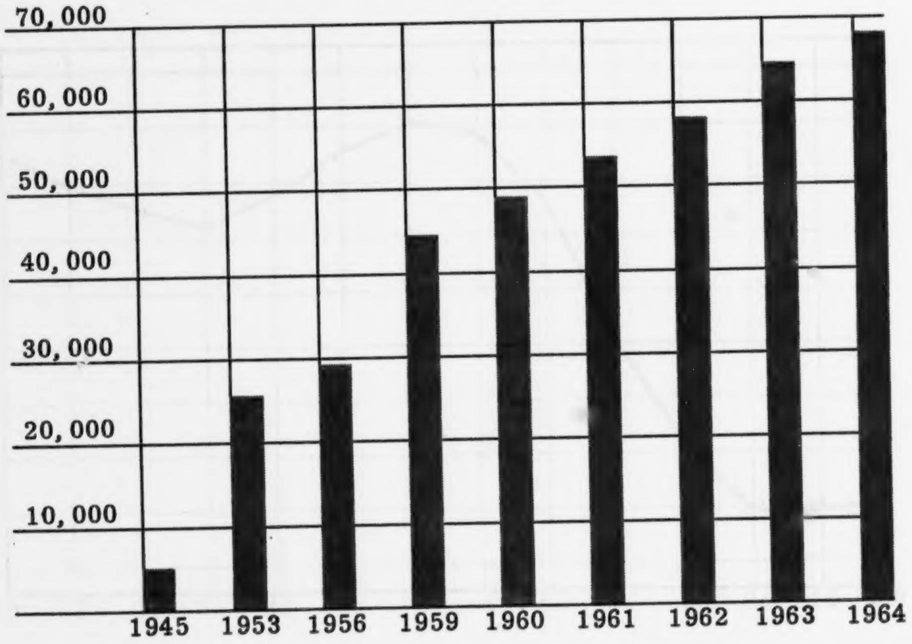
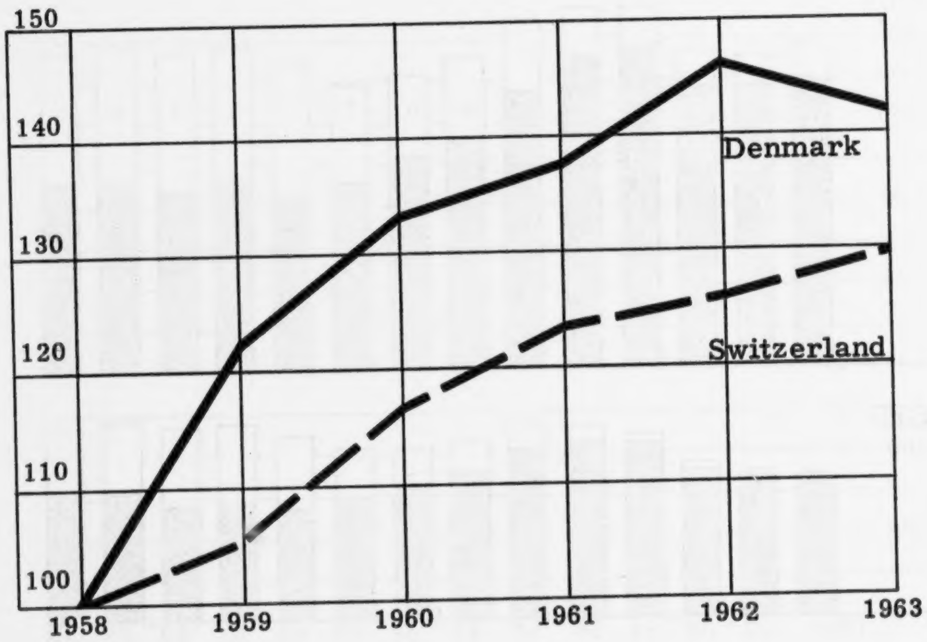


Chart 6 - Denmark and Switzerland: rapid increase followed by stabilisation (index 1958 = 100)



As shown by the figures reported from Denmark and the United Kingdom, an increasing number of young people go into apprenticeship at a higher age level and after staying on at school beyond the age of compulsory education. Both these trends, which are common to all the countries studied, are well illustrated also by recent developments in Austria where, between 1957 and 1960, the proportion of youth going into employment without training fell from 40 to 30 per cent of all young people 15 to 16 years of age.17)

These changes in educational structure and the numerical scope of apprenticeship affect apprenticeship in mainly two ways. First of all, the basis of recruitment is changing. As middle-school and secondary education take in a larger proportion of the intellectually more rapidly developing children, training officers and others responsible for apprentice training have noted with some alarm that the average intellectual capacity of apprentices has been decreasing over the past few years. A compensating factor is that the average apprentice today is older when he starts his training. Consequently, he is capable of acquiring skills and absorbing knowledge faster than could the 14-year-old children who formed the bulk of the first-year apprentices a decade or so ago.

Girls in apprenticeship

The extent to which girls are recruited into apprenticeship depends largely on the degree to which occupations which have traditionally employed women are included in the national apprenticeship system. The trade lists in several of the countries include apprenticeships in the textile and clothing industries, wholesaling and retailing, clerical work and hairdressing. All these are fields in which the majority of girl apprentices are still to be found.

Traditionally, too, girls have been more interested in short-term training, and countries where relatively long apprenticeship periods are the norm have consequently a lower proportion of girl apprentices. In the United Kingdom, for instance, where apprenticeship is common mainly in industrial and artisan trades and the period of training is long, girls make up some 13 per cent of the total number of apprentices, and most of them are training in personal service trades such as hairdressing. In the Netherlands, a country where nearly all commercial and clerical training and some training for the artisan trades take place in schools, girls constitute only a minor group among apprentices.

The proportion of girls in apprenticeship is increasing in all countries, however. In Austria, it rose from 22 per cent of the total in 1952 to 32 per cent in 1963. In Czechoslovakia, the proportion rose from 21 per cent in 1958 to 33 per cent in 1963. In Germany, the proportion of girl apprentices in industrial and commercial trades and occupations was 37 per cent in 1950; by 1962 it had risen to 44 per cent. The proportion reached in France in 1960 was approximately 20 per cent, while in Switzerland it was 26 per cent (1963) and in Denmark 32 per cent (1962).

Competition in recruiting apprentices has helped to break down many barriers which previously restricted the entry of girls into apprenticeship. It has also changed the attitudes of girls to the choice of a line of training and a trade. Girls are making inroads into some of the artisan trades, particularly the artistic ones, e. g. book-binder, jeweller, photographer and silversmith. They are to be found in increasing numbers training for work in drawing offices and chemical and physics laboratories in industry, in the more highly skilled office occupations and in banking, insurance and the wholesale business, all of which used to recruit predominantly boys.[18)]

It seems clear that the entry of girls into some of these trades was, in the first instance, merely for the purpose of filling a gap in the recruitment of boys. This trend is particularly evident in certain traditional artisan trades, e. g. in tailoring, in barbers' shops and in the food-service trades such as confectionery and catering. It is also to be observed in recent years in the drawing offices. To begin with, it was only the lower level apprentice training and the less qualified work - the routine drawing and copying - which was open to girls. Today, however, a growing number of girls are being trained for design and development work in the draughtsman's office.[19)]

The way into apprenticeship

The 14-to-16-year-old school leavers who seek an apprenticeship in any one of the eight countries have an open choice between a great number of apprenticeable trades and lines of training. As there is currently a shortage of young workers in most areas, the offer of places in which training is provided is often higher than the demand.

Most of these youngsters have received some kind of vocational orientation or guidance at school, by special careers masters (in Czechoslovakia), or at youth employment offices (Denmark, United Kingdom) or guidance services (Austria, France, Germany, Switzerland). The trend is towards providing more and better vocational orientation in the final classes of primary school. In Austria, Germany and Switzerland the 9th school year (age 14-15) being added to compulsory education normally includes periods of vocational orientation in its curricula. *In the* Netherlands, the first year of the LTS (age 12-13) has been made into a year of vocational orientation. In Czechoslovakia, periods of practical work experience form part of the curricula of the higher grades of common basic school. Competition for promising young recruits has caused many employers' organisations, large-scale industrial undertakings and the labour market authorities to intensify their information activities to schools, parents and employment services.

In many of the countries vocational guidance services play a particularly important role in the choice of lines of training and employment. In Austria and Germany, some 90 per cent of all young people pass through a guidance session before making their choice. The figures for France and Switzerland are 40 and 50 per cent respectively. Participation in a guidance session is voluntary, except in France where, in principle, it is compulsory.

The advice given is, in most instances, based on interviews, often supported by psychological aptitude tests for determining the range of the abilities and aptitudes of the school leaver. There is a general tendency in such activities to emphasise long-term apprenticeships and comprehensive training programmes, in preference to immediate employment in which training for a trade is not offered. It is often alleged that activities of the guidance services frequently lead to stressing trades and occupations which already have a large number of applicants and to neglecting the smaller trades and occupations.

Many large-scale undertakings supplement the work of the guidance offices by conducting their own medical examinations and aptitude tests. The current shortage of young applicants for employment makes such procedures increasingly illusory. Several of the training officers and apprenticeship specialists interviewed during the inquiry categorically stated that standards had had to be gradually lowered in recent years in order to ensure recruitment of a sufficient number of trainees. Some of them suggested that new policies might need to be evolved as a result of changes in educational attitudes. Previously, the normal pattern had been to recruit for training in apprenticeship the youngsters who had obtained good results at school and were successful in aptitude tests and other examinations organised by the firms. Those undertakings which were well placed in the competition for applicants and which had been able to select the intellectually most able candidates had found that, in terms of numbers of journeymen remaining on the job five years after graduation, the results of their training efforts were small indeed in relation to the costs involved. Many of their former apprentices had left the firm to take up further studies or to obtain promotion by moving to a smaller undertaking.

The consensus is that industrial undertakings which need to rely heavily on skilled workers for their production or maintenance work and yet cannot offer their apprentices a rapid career into technician, supervisory or other middle-level technical employment, should concentrate their recruitment on the large group of school leavers with average intelligence: trainees with comparatively low intelligence are unlikely to make the grade or to succeed in their training; those drawn from the above-average group are likely to leave the firm or end up by being frustrated in their work.

Except in certain economically depressed or slow-moving areas, most young people, if they so wish, are able to find an employer willing to provide training conforming to existing apprenticeship regulations, or under a less formal training scheme in fields in which apprenticeship regulations do not apply.

There are many and sometimes conflicting opinions as to the forces which determine the choice of trade and line of training. The low age at which most European apprentices start their training is likely to work towards favouring the choice of apprenticeable employment available locally. A great deal is being done to modify this tendency. Many employers are making special arrangements for housing trainees recruited outside their home town. Public and private grants-in-aid schemes offer financial support to apprentices trained away from home. According to the few figures available regarding training outside the home areas, the number of trainees benefiting from these measures seems to be rather small.[20)]

Most vocational guidance specialists affirm that school leavers usually prefer longer apprenticeships to shorter learnerships, broad occupations to specialisations in which only a few people are employed, training in larger undertakings which seem to offer better career prospects and more systematic training to training in smaller shops, and training in lighter work to training in occupations which are considered to be physically taxing. It is often said that in most cases the choice is based on passing fashion - that, for instance, hairdressing and automobile mechanics at present are among the most attractive lines of training to girls and boys respectively. There are also people who emphasise the economic motives and suggest that higher pay is the surest manner of improving recruitment to a trade.

Statistics are available to confirm any and all of these statements, even the most conflicting ones. They also indicate, however, that many other considerations must be influencing the choice. In addition to the limitations imposed on it by local employment offer and the lack of mobility of trainees, the preference scale is weighted differently in the various countries, and even regions within countries, by variations in wage rates and status concepts, the existence of career monopolies (in artisan trades) and other factors.

This would seem to be the only way of explaining why the list of trades which, in a shortage situation, have not been able to recruit their full complement is such a mixed bag: short-term and long-term apprenticeships, light and heavy work, broad and narrowly specialised, well-paid as well as low-paid trades. For example in Germany, where there were 237,000 unfilled places on 30 June 1964, the list for the boys was headed by places for retail salesmen and for clerks in wholesale and export/import business, followed by masons, fitter-machinists (a broad trade requiring long training), miners, painters, automobile repair mechanics, construction mechanics and electricians (several specialisations). On the girls' list, 41 per cent of the places left open were in retailing shops, 8 per cent in hairdressing and 12 per cent in office occupations, with approximately even distribution between long-term and short-term apprenticeships.

Drop-out rates

Judging from the number of cancellations of indentures, the drop-out rate in apprenticeship is insignificant in six of the countries - so insignificant, in fact, that it is seldom discussed or even mentioned.

The highest figures reported (Denmark) were between 15 and 20 per cent of the total number of contracts. In the United Kingdom, where part-time related instruction is recommended but is rarely compulsory, a large proportion of apprentices give up their studies at the technical college once they reach the level of the intermediate examination - normally taken at the end of two years' training and theoretical instruction - irrespective of whether they have passed the examination. The drop-out rate for part-time technical education would appear to be somewhere between 40-60 per cent, varying according to the trade in question. This does not constitute a drop-out from apprenticeship since recognition as a skilled worker is not dependent upon success in technical education courses.

One of the reasons put forward as an explanation for the comparatively high drop-out rate in Denmark is that, contrary to the United Kingdom situation, failure on the part of an apprentice to attend the prescribed courses of related instruction provides sufficient legal grounds for unilateral termination of the contract. This provision, however, is not unique to Denmark since it is also present in the apprenticeship legislation of other countries where related instruction is an obligatory part of training. The real explanation for the variations in drop-out rates must therefore be sought in the differences in the degree of compulsion applied with respect to related instruction and in the availability of the required training facilities. In Denmark, non-attendance automatically leads to termination of contract; other countries are perhaps more flexible in their application of the termination clauses written into the relevant legislation.

Full-time courses in vocational schools

In Denmark, Germany and Switzerland the number of trainees in full-time courses at vocational schools is small compared to the number of apprentices. Most of the vocational school pupils are training for office occupations, for a few trades requiring a higher degree of precision and for laboratory work. In these countries apprenticeship takes on the majority of young people going into training. Difficulties encountered in the recruitment of apprentices are the effects of increases in general secondary school education rather than the result of competition from full-time courses at vocational schools. Moreover, particularly in Germany, apprenticeship is often a normal continuation of training in, for instance, commercial schools.

In France, on the other hand, there is a choice between school and apprenticeship. At present, some 450,000 young people take their full training for journeyman qualifications at a school, while approximately 370,000 are trained in apprenticeship. The schools provide training in most fields in which training may also be had in apprenticeship.

In Austria, the vocational schools increased their numbers of full-time students rapidly during the period of 1948-1954 from some 10,000 to about 93,000. The number of registered apprentices rose more slowly during the same period. Since 1954 the relative importance of school training and apprenticeship in the vocational training system has remained about the same and in recent years, when both have diminished their intake, the schools were left with a certain reserve capacity. The number of trainees in full-time courses in fact dropped from about 22,000 in 1958 to about 18,000 in 1963. The lack of attractiveness of certain types of full-time school training offered might, in some cases, be explained by the characteristics of the local situation and heavy competition for apprentices between the different branches of economic activity.

The data available are not comprehensive enough to allow any interpretation. In France it is generally stated that the preference of young people, if they do not manage to enter secondary school, is to have training in a full-time course at a vocational school, that apprenticeship in industry would constitute a third choice and apprenticeship in an artisan trade the fourth. Some of the information available from Austria seems to suggest that such a preference scale is not always applicable, that a choice between different forms of training depends on a number of factors other than the type of institution in which training is given.[21)]

As already stated, the change-over in Czechoslovakia from a school-based system to a system of apprenticeship was motivated by dissatisfaction with the manner in which the schools were doing their job. The law of 1958 opens two possibilities for undertakings to organise the training of their apprentices: "individual training" which largely resembles training on the job in other countries and "group training" under which a substantial part of the period of apprenticeship is spent in a training workshop.

Similar trends towards greater variation in the forms of training and towards placing at least basic training in training workshops is found in all the countries. Many youngsters prefer to stay on in a school atmosphere, at least for basic training, and to put off concluding an indenture. Some industrial and commercial trades employers are supporting this development, and an increasing number of parents are encouraging their children to stay on longer at school. If the public authorities do not offer adequate training facilities, private commercial schools are likely to grow and to attract an increasing number of trainees. In other fields, particularly in certain skilled trades in industry for which systematic basic training is of special importance, industry itself will take on the task of organising company schools, separate training workshops and training bays in which apprentices spend a considerable part of their period of training.

There is a similar development taking place in certain fields requiring high precision and/or mature judgement. As an example, the Swiss watchmaking industry has organised, in co-operation with the cantonal authorities concerned, a network of schools for training watchmakers, tool- and instrument makers and other broadly and highly skilled specialists employed in the industry, as well as the repair and sales personnel on which the industry depends for its service after sales.

The selection of countries for the present study is perhaps not the best one for arriving at any specific conclusion regarding the respective powers of attraction, under different circumstances, of schools and apprenticeship when a situation of competition exists between the two systems of training. The experience of other countries of Europe, where vocational secondary schools are run on different lines to those found in France and Czechoslovakia, seems to suggest conclusions contrary to those sketched above.

CHAPTER II - THE ORGANISATION OF TRAINING

Apprenticeable trades

In seven of the eight countries the organisational structure of apprenticeship is based on a list of trades approved by public authorities. In most cases the lists are supported by special training regulations - trade descriptions, training standards and examination requirements - established for each trade and officially approved for national application and recognition of training. In the United Kingdom there is no such officially recognised trade list: trades are declared apprenticeable by collective agreement between employers and unions.

The trend is towards more complete and more detailed regulations in an extended field of activity. More industries are covered by the trade lists today than previously. In the United Kingdom, for instance, the industrial training Acts of 1964 provide for the establishment of industrial training boards with the power to make recommendations on the nature, content and length of training for all occupations in their respective industries.

In several of the countries it is difficult to arrive at a complete and clear picture of the list of recognised trades. In Austria, France and Switzerland, state, regional or cantonal regulations supplement those established at the national level. In the Netherlands and the United Kingdom, the same or closely related occupations may have been taken up for regulation by more than one authority. In Austria, France and Germany, much the same occupations may be found in the industrial/commercial trade lists and in the lists of apprenticeable occupations for the artisan trades.

Except when a distinction is made between "industrial" and "artisan" trades, the lists and regulations are equally applicable to training in large-scale and smaller undertakings. In some cases they are valid for training both in schools and in apprenticeship, as in each case it is preparing for the same examinations.

The number of apprenticeable trades varies considerably from one country to another. In the United Kingdom, where until recently only skilled trades were included in the relevant collective agreements, the total number is said to be about 100. In other countries, where semi-skilled, specialised and skilled occupations may all gain official recognition, the number of distinct apprenticeable occupations lies somewhere between 200 and 500. The inclusion of commercial and agricultural training in an apprenticeship system may add no more than 20 to 50 specialisations to the list.

With one exception - Czechoslovakia - none of the countries has undertaken a revision of the complete list of apprenticeable trades with a view to achieving a unified system. Instead, the lists have grown and been altered according to changing circumstances and conflicting pressures. In Denmark, adoption of the 1956 apprenticeship Act led to a review of training practices in most branches of activity. In France, Germany, the Netherlands, Switzerland and the United Kingdom many new or revised training regulations have been issued in the recent past, deleting obsolete trades from the lists and making other modifications.

"Artisan" trades

With some minor differences resulting from national custom and local usage, the trade lists include a certain number of predominantly artisan trades which are common to all the countries. They have their roots in the traditional distribution of work in the building trades (mason, carpenter, painter, locksmith etc.), printing industry (compositor, pressman etc.) and the service occupations (barber, baker, chimney-sweep, hairdresser etc.). They make up a basic list totalling approximately 150 trades.1)

In countries where unions are organised on a trade basis and craftsmen in the artisan trades are organised in guilds, apprenticeship in these trades is a prerequisite for entering the union or, for the journeyman and mastercraftsman, the guild or trade corporation. The traditional distinctions between apprentice, journeyman and mastercraftsman have usually been preserved in these trades and trade examinations are held both at journeyman and mastercraftsman level.

In two cases, Austria and Germany, the artisan trade lists have been established by law. Except in Czechoslovakia and the United Kingdom and in a majority of crafts in France, these trades are, in most instances, combined with trade monopolies and legislation protects them from outside competition. Common to most countries is the fact that, in these fields, the trade associations enjoy a wide measure of autonomy in organising apprenticeship and mastercraftsman training. In Austria, France and Germany the artisan trades apprenticeship system is organisationally separate from the industrial and commercial apprenticeship system.

The artisan trades lists have changed very little. A few trades and occupations relating to new services have been added as the need has arisen, e.g. automobile repair and maintenance, radio and TV repair.

Certain modifications in the training regulations have been made over the years in response to technical change, but formal adaptation of official texts to new situations is slow, and resistance to change is widespread. How strong this resistance may be in the individual cases depends upon the national situation: the nature of the legal provisions and the possibility of changing them, the strength of the craftsmen's organisations and journeymen's unions, and the extent to which the trade monopolies can be upheld.

The lack of mobility in some of these patterns has been demonstrated with particular clarity in the past few years in the United Kingdom where a trade-determined trade union structure, in some cases based on monopolistic training practices, has long been alleged to be a serious obstacle to the introduction of new techniques. This immobility is also evident in fields (e.g. the building and printing industries) in which group monopolies, combined with rigid systems of remuneration, sometimes tend to make technical change uneconomic.

The role of apprenticeship in establishing such monopolies, and the extent to which restrictive practices of this kind exist, could not be determined with any degree of certainty in the course of the present study. Many examples given by persons contacted were contradicted by others. Where monopolies do still exist, they seem to be of diminishing importance. The practice of setting maximum numbers for recruitment of apprentices to a trade is being abandoned and in many trades, such as electrician, locksmith, mechanic, hairdresser and others which are currently attractive to young workers, the number of apprentices largely surpasses the numbers required [2).

Where recruitment figures are low in relation to the number of journeymen employed, the situation can often be explained by a shortage of applicants. This shortage of recruits would appear to be the most important factor determining the apprenticeship policies of the majority of trade associations today. Change of trade after completing training is in fact affecting some artisan trades to such an extent that journeymen's unions, mastercraftsmen and employers have joined in a fight to preserve their trades. An example frequently mentioned was the trade of men's tailoring which encounters recruitment difficulties in all countries despite good career prospects for competent craftsmen in both artisan services and the clothing industry.

Because of the often rigid structure of the artisan trades and the close relationship between apprenticeship and the right to set up shop, changes in training for these trades frequently take place without corresponding changes being made in the official training regulations. This is possible because the trade descriptions are mostly loosely formulated and leave much room for interpretation. It would be an interesting study, for instance, to determine the proportion of building trades locksmiths who, in each of the countries, are capable of making or repairing a door lock. Most of them are today trained in quite different functions.

Industrial and commercial trades and occupations

National differences in the composition of trade lists are far greater in the industrial and commercial sectors. Different principles are, as a rule, applied in determining apprenticeable trades for industry and commerce respectively. Industrial trade classifications are usually more directly related to specific occupations currently found in industrial production and maintenance. Their trade descriptions and training syllabi enumerate in technical terms of tools, materials and equipment, the type of tasks and operations to be included in the training, and their examinations normally include both a practical test and an examination of theoretical knowledge. In this they resemble the artisan trades. In the commercial trades and occupations, on the other hand, trade classifications tend to be broader, syllabi to be less specific as regards technical content, and examinations to consist of only a test of knowledge acquired in related instruction.

How trade lists have changed

In all eight countries, employers' and workers' organisations have considerable influence in the establishment of the trade lists. In Germany, proposals for new training regulations, and consequently for the inclusion of new trades in the list, are the responsibility respectively of a specialised employer-sponsored office for the industrial and commercial sectors and the central organisations of artisan trades. In Denmark and the Netherlands, proposals regarding new trades or changes needed in old trade regulations are prepared by bodies which represent employers and workers and are organised separately for each major economic sector.

The same general principle is applied in the new industrial training Acts in the United Kingdom and, to some extent, in France. In these two countries, proposals for establishing new trades or changing existing ones are first made by joint advisory committees organised according to industry. The Swiss federal authorities determine standards for new or modified trades in consultation with employers' organisations and journeyman unions. In Czechoslovakia the lists and training regulations are determined by the Ministry of Education in close co-operation with the ministries of the industries concerned and the trade unions. The situation in Austria is somewhat unique as no administrative procedure exists, at the federal level, for introducing new trades or changing existing ones.

The nature and direction of these trade influences seem to have varied greatly over the past ten to fifteen years. Emphasis is given to one aspect or another according to changing employment market conditions. Technical change is clearly only one of the considerations taken into account. In one country a national committee which in 1957 had recommended and obtained recognition as a specialised trade for the maintenance mechanic trained according to specifications geared to the needs of the industry concerned (chemicals), three years later recommended recognition of a general trade of maintenance mechanic and abolition of specialisation in this field.

In the 1930's, and in some countries during the period immediately following the second world war, there was a general trend towards the creation of many new specialisations and towards classification of trades along relatively narrow lines. Many narrowly specialised trades still figuring on the lists today first gained recognition during this period.

More recent trends, obviously influenced not only by technical considerations but also by a desire to broaden the field of recruitment, have emphasised broad and basic qualifications rather than narrow specialisation. This has been particularly evident in France where training regulations determine not only the fields open to apprenticeship in industry but also the lines of training offered by the public vocational schools. The establishment of broad and basic trades has been in the joint interests of the educational authorities, the unions and the employers. It facilitated the organisation of training in the schools. It increased the worker mobility sought after by the unions. The employers saw in it a measure which would widen their field of recruitment.

It is typical of this general trend that in Germany, between 1947 and 1962, no fewer than 28 apprenticeable occupations in industry were combined to form eight new and broader trades. Only one trade - in the printing industry - was split up. In Germany, too, many of the 33 new trades included in the 1962 list of 445 industrial trades are broad in their application: technical draughtsman, laboratory assistant (physics), laboratory assistant (chemical), instrument mechanic (automated equipment). Over the same period 163 industrial and 10 commercial trades were deleted from the list as obsolete, deserted or unduly specialised, and 17 new commercial trades were added to it.3)

The principle applied in most countries in reducing the number of trades is perhaps best illustrated by an example taken from the revisions of the trade list undertaken during and since 1958 in Czechoslovakia. The total number of trades was reduced from 360 to 260 along the lines illustrated in Chart 7, page 53.

As a rule, the public authorities, employers and industrial trade unions concerned are all agreed on keeping trade lists as short as possible within a broad policy of providing an adequate number of opportunities for long-term training in all fields of economic activity.

In Germany, the Central Office for Industrial Training (Arbeitsstelle für betriebliche Berufsausbildung) agreed to recommend for recognition less than 10 per cent of the 400 new trade classi-

Chart 7: Czechoslovakia - Extracts from previous and current trade lists showing changes introduced in 1958

Old apprenticeable trade (before 1959)	New apprenticeable trade (since 1959)
Chemical worker (semi-finished products and dye-stuffs) Chemical worker (organic chemistry) Chemical worker (inorganic chemistry) Chemical worker (coke burning apparatus)	Skilled chemical worker
Fitter-assembler (industrial machinery) Mechanic-repairman (agricultural machinery) Fitter-assembler (marine engines) Assembler (marine equipment) Mechanic-repairman (road construction machinery)	Fitter-assembler
Toolmaker (stamping machines) Toolmaker (measuring instruments) Toolmaker (universal)	Toolmaker
Mechanic-repairman (industrial apparatus) Fitter-mechanic (maintenance) Fitter-assembler (leather industry) Fitter-assembler (textile industry) Electro-mechanic (mining)	Maintenance mechanic
Mechanic (precision instruments) Mechanic Mechanic (office machines) Mechanic (optical equipment) Mechanic (sanitary installations)	Mechanic
Maintenance electrician Electrical fitter (industrial equipment) Electrical fitter (textile machinery) Electrical fitter (tramways and buses) Electrical assembler	Maintenance Electrician

fications proposed between 1947 and 1962.

The situation in the Netherlands has not, on the face of it, followed the general reduction trend, since 50 new trades were recognised in the five years between 1960-1964. The principal explanation for this is that the old list was too short for the system to function in all industries.

Why the trade lists change

There are many reasons for modifying the trade lists. A small number of new trades are added to take account of technical change and recent inventions. A typical example is the trade of instrument mechanic, the man who sets and repairs automated equipment, which has been added to the lists in Denmark, Germany, the Netherlands and Switzerland. In France, the recognition of new trade examinations, in the industrial sector, for the occupations of general mechanic, mechanic for hydraulic and pneumatic machinery, assembler of electronic equipment, and electronic equipment repairman has come essentially from the same need to keep pace with new developments.

In certain cases, such as the Netherlands, a broadening out of the system entailed adding new trades in which training was already being given but without contractual arrangements.

Another reason for adding new trades to the list may be found in the difficulties encountered in some sectors which previously did not have formal training schemes leading towards a supervisory career and which, for lack of such schemes, were no longer able to recruit young people of the required calibre. In the chemical and iron and steel industries, for instance, several countries have recognised new, skilled production trades. Training officers and industrialists in these industries often suggest that the new trades, by and large, are of little importance at the production worker level. They have been created mainly because there is an urgent need for recruiting young people to the industries and for preparing them for a career into the supervisory grades. Without the promise of such opportunities, the desired number and quality of recruits would not come in.

In a few cases, new trades have been added as a result of splitting up existing broad trades or occupations into two or more specialisations. Occasionally this splitting up may, in fact, be the result of technical change and increasing specialisation in employment; in such instances, grounds for modifying the official list are virtually indistinguishable from the reasons given above. Far more often, however, the addition indicates that some older trade descriptions have been too broad and have allowed too much freedom in the employment and training of apprentices. Only by splitting up the trade and making the training regulations more precise could the training be given purpose and meaning. This has largely been the case in retailing where vast differences exist between the various branches: a hardware salesman and a self-service food shop attendant can hardly be trained according to the same regulations unless the regulations are extremely general in character.

Another way in which trade lists are being modified is by consolidating and broadening some specialisations which, either because of technical change or for other reasons, have been found too narrow and restrictive. Such changes have been introduced in all the countries, but the underlying motives are not necessarily always the same. In one instance it may be clearly a question of broadening the trade in order to give workers better career prospects and greater mobility within the industry. In other cases the motive may be to widen the basis of recruitment into the industry concerned.

Finally, some trades have been deleted from the lists as obsolete. Except in Czechoslovakia, Denmark and Germany, deletion is a rare act indeed. Trades must usually have been deserted for many years before they are struck off the lists.

As a result of these many and varied influences, most national trade lists make somewhat bewildering reading. Some trades are extremely broad (e. g. "retail salesman", "mechanic") and cover a whole range of specialisations; others are highly specialised - in one country, for example, "cutter, men's underwear, industry" and "cutter, men's underwear, artisan trades" are included in the same list.

Duration of training

In Germany both the trade lists - for industry and commerce and for the artisan trades respectively - distinguish between "learner trades" (Anlernberufe) and "skilled worker trades" (Facharbeiterberufe). The period of training is shorter for the learner trades (one to two years) and there is no compulsory examination concluding the period of training. In the skilled worker trades, on the other hand, the training lasts between three and three and a half years and the trainees have to pass a final examination in order to obtain a trade certificate. This distinction between "learner" and "skilled worker" trades was introduced in Austria by the German authorities during the Anschluss period. It carried over into the early post-war period but has since been abolished. Today apprentice training under contract may only be undertaken for a recognised trade leading to full qualification as a skilled worker.

A similar distinction may be made in France but is rarely applied. No such distinction is made in any of the other countries. As already indicated, apprenticeship in the United Kingdom applies only to trades which are considered to require a long period of training; it should, in all cases, lead to qualification as a skilled worker. The 1964 industrial training Act has foreseen the need to organise training for what are now termed the "non-apprentice occupations", but to date no regulations have been established to cover training for these less-comprehensive trades and occupations. It should be noted, however, that a large proportion of the young people classified in the statistics of the United Kingdom Ministry of Labour as being in employment with training are non-apprentices. The duration of training in these cases is between one and three years,

2

whereas skilled trades normally require between four and five years. Details regarding minimum and maximum periods of apprenticeship are found in Chart 8, page 59.

In most countries the trend both in the recognition of new apprenticeable trades and in the choice made by young persons is towards longer periods of training. In Denmark, where short-term apprenticeships were introduced in the metal trades for the first time in 1956, only adult apprentices (most of them over 35 years of age) accepted such training. In German industry, short-term learnerships (1 to 2 years) have become distinctly less popular in recent years, registering a fall from 11 per cent of all industrial apprenticeships in 1954 to a little over 5 per cent in 1962. During the same period the number of trainees in long-term training (three and a half years) rose from 40 per cent to 52 per cent.[4)]

In the Netherlands, as already indicated, the period of training at the junior technical schools (LTS) has been raised from two years to three years. Some of the schools are now extending the duration of certain courses to four years, without making any reduction in the customary period (two or three years) of complementary training in apprenticeship.

The only country in which a reverse trend might be observed is the United Kingdom where a reduction of the customary five years of training to four years has been accepted in the building industry. In this connection it should be noted that, even allowing for this reduction, apprentices in the United Kingdom generally

Chart 8: **Minimum and maximum periods of apprenticeship**

Country	Years of apprenticeship	Remarks
Austria	**2-4**	**According to trade**
Czechoslovakia	**2-3**	**According to trade: 3 years in the majority of trades. Reduction for trainees who have completed secondary education**
Denmark	**2-4**	**4 years in the majority of trades. May be extended to 5 if the trade committee can justify the need for a longer period**
France	**3 (average)**	**Artisan trades regulations provide for a minimum of 2 years**
Germany (Fed. Rep.)	**"learner" trades 1-2 skilled trades 3-3^{1}/2**	**Reduction possible for trainees in skilled trades who have completed secondary education**
Netherlands	**2 - 3**	**For holders of an LTS certificate.**
	2-4	**For trainees who have had no basic vocational training**
Switzerland	**1-4**	**According to trade**
United Kingdom	**4-5**	**5 years in the majority of trades; 4 years in the building trades and a few other trades**

complete their training at an age level higher than that of most of their continental counterparts.[5)]

Some Danish trade committees (stone, woodwork and commerce) permit a shortening of the standard training period if the apprentice, when he starts his training, is older than the minimum age for entry into apprenticeship (14), or has attained a higher level of education than that of the average apprentice. The Czechoslovak, German and Swiss trade lists, and some apprentice schemes in the United Kingdom, also accept a reduction in the period of apprenticeship for trainees who have remained on at school and have acquired educational qualifications higher than those normally held by apprentices entering the trade.

Some national trade lists - in Austria, Denmark and Switzerland - open the possibility for training in both single and combined trades. For instance, an apprentice may be trained as a baker (2 years) or as a baker/confectioner (3 years). A qualified baker may broaden his qualifications to cover the combined trade by serving an additional period of one and a half years in a confectioner's shop. Fully trained building locksmiths, plumbers, coppersmiths and pipe fitters in Switzerland may all acquire recognised qualifications as heating and air conditioning (installation) mechanics by serving a supplementary one-year apprenticeship over and above the normal period of three to four years for their original trade. In many cases these are traditional arrangements which were initially accepted at federal level to take account of regional or local variations, or were introduced to cater for the need for broadly skilled craftsmen in small localities. A similar system of specialised supplementary training after completed apprenticeship (mention complémentaire) has been introduced in France for certain trades.

There has been much discussion in recent years about organising training as a line of progressive learning in which some specialisations would be classified as "upgrading trades". Despite the existence in several countries of requests for introducing such a system, the only examples found during the survey were in Austria, Denmark, France and Switzerland where a few trades have made arrangements intended to give certain craftsmen a chance of acquiring broader qualifications through an additional but shortened period of further training.

Distribution between sectors of economic activity

Where the historical development of apprenticeship has resulted in the existence of two parallel apprenticeship streams, there has been an over-all trend away from artisan trades apprenticeship towards training in the industrial trades and commerce. Wherever the trade list includes commercial and clerical occupations, there tends to be an even greater relative swing away from industrial apprenticeship towards commercial and clerical training.

Apprenticeship figures for Austria, for instance, show that the increase in the number of apprentices entering commercial trades and occupations (including the hotel industry) between 1950 and 1963 was over 200 per cent, whereas the corresponding increases for the artisan trades and industry were 30 per cent and just over 100 per cent respectively (Table 2, page 63).

Table 3 demonstrates a similar movement in Germany. In absolute figures, all apprenticeship has been following a downward curve for demographic reasons: 1.5 million apprentices in 1956, the peak year, and 1.3 million in 1963. The decrease is apparent in the absolute figures for industrial/commercial apprenticeship, for training in agriculture and for apprentice training in the artisan trades. It is only the artisan trades apprentices which registered a relative as well as an absolute decrease. There was, on the other hand, both an absolute and a relative increase in the number of apprentices registered for clerical and other office occupations during the same period (Table 3, page 63).

In Denmark, the same trend towards commercial and office occupations can be deduced by comparing the number of new apprenticeship contracts concluded in 1962-63 with the number registered in 1956-57 (Table 4, below, page 64). The lion's share of the increase has been absorbed by retailing and office occupations.

The sharpest increase has occurred in clerical and other office occupations, as shown in Table 5 (page 64). Retailing made more uneven progress. It has clearly been losing its power of attraction in recent years - no doubt a reflection of the rationalisation trend which is a characteristic feature of European retailing today, particularly in food distribution.

Table 2: Austria - Trends in apprenticeship, by major sector, from 1950 to 1963

Year	Artisan trades	Industry	Commerce and the hotel industry	Transport
1950	69,000	10,800	13,000	100
1951	67,300	11,900	13,100	100
....				
1955	93,500	24,100	27,000	500
1956	100,200	24,900	31,000	600
....				
1961	87,600	20,700	34,700	700
1962	88,700	21,300	37,300	900
1963	90,400	22,000	40,300	900

Table 3: Federal Republic of Germany - Employment of apprentices and learners, by major economic sector, from 1950 to 1963

Year	Total number of apprentices	Percentage employed in			
		Industry and commerce	Artisan trades	Agriculture	Other employment
1950	971	42.1	52.4	3.1	2.4
....					
1956	1,458	54.0	39.4	3.1	3.5
....					
1960	1,224	58.4	35.3	2.9	3.4
1961	1,197	59.2	34.5	2.8	3.5
1962*	1,225	59.2	33.1	2.7	5.0
1963*	1,274	58.3	33.8	2.6	5.3

* including West-Berlin

Table 4: Denmark - New contracts registered in 1956 and 1962

Year	Total	Per cent increase	Percentage in:	
			Industry and artisan trades	Retailing and office occupations
1956	22,700		62	38
1962	33,000	45	55	45

Table 5: Denmark - New contracts registered in retailing and office occupations in 1956 and 1962

Year	Retailing		Office occupations	
	Total	Per cent increase	Total	Per cent increase
1956	5,060		2,734	
1962	8,071	60	5,927	116

That not only economic factors - the wages and allowances offered, the expansive force or vitality of the different branches of economic activity - are of importance in determining the level of recruitment into the different sectors is demonstrated by figures for Germany (cf. Table 6, below) indicating apprenticeship trends in the major branches of industry between 1958 and 1962. The stone and clay products industries, ceramics, woodworking, leather, glass, textiles and food processing have

Chart 9 - Czechoslovakia: Distribution of 324, 800 apprentices by field of economic activity (1963)

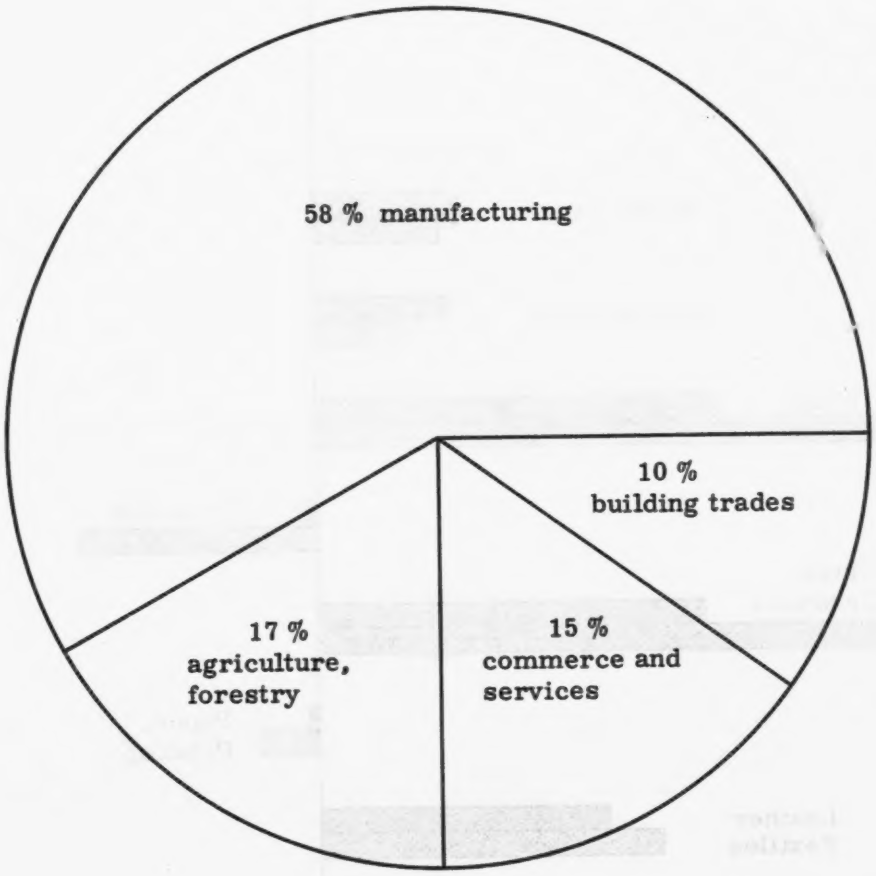
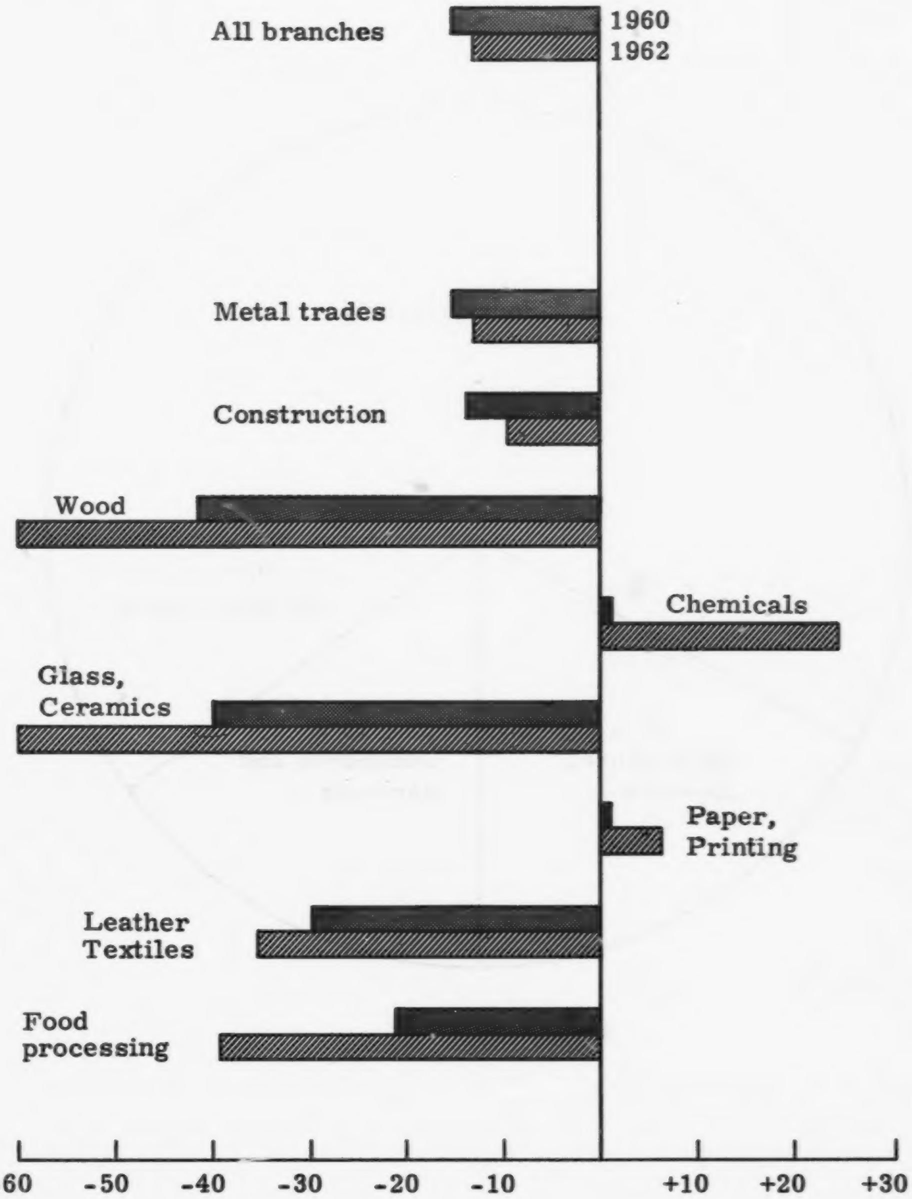


Chart 10 - Federal Republic of Germany: Percentage change in the number of apprentices by branch of industry 1958-1962 (index 1958 = 100)



all lost heavily. The chemical industries, paper and paper-products manufacturing and the printing trades show both absolute and relative increases, while the metal trades and building/construction have barely held their respective positions.

Table 6: Federal Republic of Germany (including West-Berlin) - Distribution of industrial apprentices (excluding learner trades) by branch of economic activity

Sector of economic activity	1958	1960	1962
Metal trades (including basic metal industries)	215,800	181,500	187,600
Stone and clay products	900	500	300
Construction trades	12,700	11,200	12,000
Woodworking (including furniture)	4,300	2,500	1,700
Chemicals	6,500	6,600	8,100
Glass	900	700	600
Ceramics	1,000	600	400
Paper and paper products; printing trades	17,400	17,600	18,500
Leather	1,100	600	300
Textiles	4,600	2,800	2,300
Clothing	5,900	4,700	4,900
Food processing	3,300	2,600	2,000
Total	274,400	231,900	238,700

A more detailed analysis of the data available shows that this apparent stability in the number of building trades apprentices registered with the Chambers of Industry and Commerce can largely be explained by a rapid increase in the number of draughtsman apprentices, which more than doubled during the five years in question, whereas recruitment of apprentice bricklayers, carpenters, painters, etc. dropped sharply. The number of building trades apprentices registered with the Chambers of Artisan Trades, most of whom belong to the traditional building crafts, fell even more drastically: 145,000 in 1958, 70,000 in 1963. Yet, throughout the period, construction has been a booming industry and the apprentice allowances offered have risen rapidly and substantially.

For a variety of reasons it has not proved feasible in the other countries to arrive at a statistically valid and detailed assessment of the changes in apprentice enrolment. In Czechoslovakia and the Netherlands, the reorganisation of the systems of apprenticeship has been too recent; in France and Switzerland the trade classifications have not been sufficiently constant to permit comparison. Figures available from the United Kingdom only list apprentices according to major sector of economic activity.

It is a feature common to all countries, however, that the manufacturing industries and the service occupations currently hold the dominant position as regards recruitment of apprentices. This fact is illustrated in Tables 7 and 8 concerning the distribution of apprentices by major economic sector in Switzerland and Great Britain respectively in 1963. In Switzerland, the manufacturing industries accounted for nearly 50 per cent of all apprentices; about 45 per cent were in commerce, the hotel trades and other service occupations. The figures include horticulture and forestry but not agriculture (Table 7, below).

Table 7: Switzerland - Number of apprentices in the major sectors of economic activity in 1963

Sector of economic activity	
Horticulture and forestry	1,700
Manufacturing	64,300
Construction	6,300
Commerce, hotel industry and other service occupations	58,500
Other	300
Total	131,100

Of some 117,000 new apprentices reported on in Great Britain in the same year, 34 per cent were indentured in the manufacturing industries, with commerce and service occupations in second place, followed by the construction industry. It must be remembered in this connection, however, that training in apprenticeship represents only a quarter of the number of all young people of apprenticeable age going into employment (with or without training) on leaving school (Table 8):

Table 8: Great Britain - New apprenticeship contracts in the major sectors of economic activity in 1963

Sector of economic activity	
Agriculture, forestry, fishing	1,700
Mining and quarrying	1,800
Manufacturing	39,700
Construction	26,900
Commerce and service occupations	38,000
Transport and communication	3,300
Public administration	5,600
Total	117,000

Distribution between trades

Statistics on occupational preferences show a distinct concentration, in most countries, to a few major trades and a gradual desertion of old-fashioned and "small" trades. The number of apprentices in employment in France in 1963-64 was 365,300.[6] They were apprenticed in 573 trades or occupations, but 178 of these trades were each employing not more than 10 apprentices: 293 of them (or 51 per cent) had fewer than 50 apprentices. Ten trades between them employed 56 per cent of the total number indentured (Table 9). For its variety, the list of these top trades makes interesting reading but throws little light on the factors which determine the apprentices' choice, the offers made by employers and the interrelationship between the two.[7]

Table 9: France - The 10 trades employing the greatest number of apprentices in 1963-64[8]

Trade	No. of apprentices
Hairdresser-barber	45,800
Butcher and sausage-maker	28,600
Automobile repair mechanic	25,600
Plasterer-painter	20,400
Electrician	19,000
Retailer	15,000
Baker-confectioner	14,800
Carpenter	14,000
Bricklayer-stonemason	13,100
Dressmaker	9,000
Total	205,300

The majority of the girls (total: 74,100) were concentrated in a few trades: hairdresser - 30 per cent; salesgirl (retail) - 20 per cent; dressmaker - 12 per cent. The remaining 38 per cent were distributed fairly evenly over various commercial and office occupations, in textile trades, household work and cooking.

In Austria, the 10 apprenticeable trades with most apprentices in artisan trades and industry on 31 December 1962 were as follows:

Artisan trades	
Auto-mechanic	8,400
Hairdresser	7,400
Bricklayer-stonemason	7,100
Joiner	7,000
Electrical fitter	6,800
Fitter	5,400
Ladies' tailor	5,200
Plumber-pipe fitter	4,300
Painter-paperhanger	4,200
Baker	3,400

Industry	
Mechanic	3,600
Commercial apprentice (industry)	3,200
Auto-mechanic	1,500
Maintenance mechanic	1,500
Toolmaker	1,300
Turner	1,300
Fitter	800
Maintenance electrician	700
Electrical and electronics fitter	700
Steel-girder construction fitter	700

Artisan and industrial trades often bear almost identical names. They do not always have the same connotation, however, since each sector trains according to regulations peculiar to itself. The 20 trades listed above accounted for almost 50 per cent of all apprentices in 1962.

Table 10: Federal Republic of Germany - Number of apprentices in 11 industrial and commercial apprenticeable trades in 1962

Trade	
Retailer	191,000
Commercial and administrative clerk in industry	82,900
Wholesale (export/import) clerk	75,600
Fitter mechanic	45,500
Bank clerk	26,100
Toolmaker	20,900
Clerical worker	19,200
Electrician (*high-voltage*)	16,600
Draughtsman	15,700
Turner	14,000
Maintenance mechanic	12,800
Total	520,300

Table 11: Federal Republic of Germany - Number of apprentices in 11 apprenticeable trades in the artisan trades in 1961

Trade	
Automobile mechanic	54,600
Hairdresser	53,600
Electrical fitter	38,500
Bricklayer-stonemason	28,700
Painter-paperhanger	22,800
Ladies' tailor	16,300
Fitter	16,200
Joiner	14,900
Butcher	12,900
Baker	12,400
Plumber-pipe fitter	12,000
Total	282,800

A relative, and in part also an absolute decline in enrolment in the following trades has been observed over the years: shoemaker, cartwright, smith, turner (wood), the textile trades. On the other hand, there has been a considerable increase in the numbers training to be an automobile mechanic, radio mechanic or cook, and in commercial and tourist trade occupations generally. The metal trades and office occupations seem to be rather more attractive to young people but the building trades have been faced with considerable recruitment problems in Austria. It is estimated that in and around Vienna the building trades need about twice as many apprentices as they have at present.

In Germany, at the end of 1961, 88 per cent of all industrial apprentices were enrolled in 12 per cent of all industrial trades (Table 10).

Eleven artisan trades (of a total of 124) shared between them 69 per cent of the apprentices in this sector (Table 11, above). Three of them - automobile mechanic, hairdresser, electrical fitter - employed about as many as the remaining eight trades.

CHAPTER III - THE ORGANISATION OF INSTRUCTION

Training in apprenticeship is regulated in most countries by detailed job descriptions, training syllabi and examination standards established for each trade. These regulations differ between the countries as regards both scope and purpose.

In France, syllabi issued by the Ministry of Education determine the scope of the recognised examinations, but not the actual programme of training in apprenticeship. Training regulations issued by the German Federal Ministry of Economic Affairs contain a summary analysis of the operations and functions of the trade, a list of the physical and mental aptitudes required for the trade, a training syllabus and a description of the fields in which apprentices should be examined at the end of their training. They do not deal with the organisation of related instruction. In Denmark, curricula for both practical and related instruction are issued by the Minister of Education on the basis of drafts prepared by the appropriate state inspectorates of technical instruction in consultation with the trade committees and educational councils concerned.

In the United Kingdom, syllabi approved by the respective departments of education only concern courses of related instruction. In cases where training within undertakings is governed by any type of more formal regulation, such regulations are determined by voluntary training schemes agreed upon between national employers' and workers' organisations. The City and Guilds of London Institute has drawn up syllabi for practical training in some trades (see below, page 113).

Scope and content of training regulations

The variations in the scope and nature of the training regulations issued by national authorities are so great that a detailed description of them would not serve a useful purpose in the context of this report. Moreover, the principles applied in preparing such training regulations have themselves been changing. There is a clear line of development within all the countries: the more recent training regulations are more detailed than the older ones, and they tend to give more practical guidance on how the training might be organised.

In Czechoslovakia, Denmark, Germany and the Netherlands, detailed training syllabi and instructions regarding individual exercises to be carried out by trainees in their basic training, as well as, in several cases, comprehensive outlines for training on the job are now being issued by the central training authorities. These syllabi are frequently accompanied or supplemented by teaching aids, manuals and audio-visual aids adapted to the standard programmes. The use of any such additional material is, of course, optional.

The German training regulations for the trade of electrical and electronics fitter may serve as an example of some of the more comprehensive types of training regulations in existence. There are three parts: the job description, the training syllabus and the examination standards. Each part may be amended independently. In this particular case the job description and syllabus were revised in 1963; the examination standards date from 1950. Together they consitute a 50-page booklet which is given to both employer and trainee.[1)]

The first part - a 2-page job description - is intended as an annex to the indenture so as to define clearly the limits of the field in which the trainee is to receive instruction. For the electrical fitter's trade the job description covers the production, assembly, use, setting, testing, running and maintenance operations relating to electrical equipment. Several options, described in terms of product specialisations, are listed: telecommunications and radio, machine and machine-tool assembly and parts production, other industrial installations, electromedical equipment and the repair of electronic equipment, automotive vehicles. Common to all options is training in the operation, care and maintenance of tools, jigs, fixtures and machines and other equipment used by all electricians.

The skills and knowledge which should be taught within the undertaking are divided into two categories: (a) minimum knowledge and skill requirements, and (b) experience considered desirable for an electrical fitter, but not essential.

The list of minimum requirements for the trade includes basic manual skills to be acquired at the filing bench and on various machine tools; wiring and winding jobs; assembly, testing and running of different types of electrical equipment and motors. It also prescribes intensive instruction in both electrical and mechanical measurement techniques. Special emphasis is laid on safety regulations, trouble-shooting techniques and the maintenance of tools and equipment. Desirable but inessential skills include planing, grinding, welding and gluing.

Part 2, a 46-page training syllabus, describes the above operations in greater detail, giving examples of the type of work to be selected for instruction purposes and the tools which the trainee should learn to handle. It gives a number of examples of how training might be planned in different types of undertaking and for the various options allowed.

The third, and final part consists of the examination standards. It describes the nature of the specimen job to be carried out by the trainee during the 24 hours allowed for the practical test and specifies the subjects to be covered in the oral and written theoretical examinations in trade technology, technical drawing, trade mathematics, civics and business economics.

In all the countries, employers are allowed a relatively wide margin of variation within the general framework provided by the training regulations. The latter tend towards being what might be described as a codification of good existing practices and the essential skills and knowledge required in the trade. Most training regulations are the result of a compromise between the ideals of quality training and the desire for high trainee output. On the whole it may be said that the broader the trade, the vaguer must be the regulations. The syllabi and standards applicable to an upholsterer, for instance, can afford to be far more detailed than those intended to cover the wide range of specialisations included in the general classification "mechanic".

One of the principal conclusions drawn in an international comparison carried out by CIRF in 1963 under another research project was that, even under strictly controlled systems of apprenticeship, variations in training standards are at least as great within a country and between undertakings, as between countries which have organised their training differently.2)

Data obtained during this project and from other sources show that by no means all apprentices trained according to detailed regulations will end up as skilled workers, foremen or technicians, or be running their own business some 10 to 15 years after completing their training. Their apprenticeship determines the level at which they are likely to find work, but their future employment will not necessarily be in the trade - or even in the branch of economic activity - for which they were originally trained.

Some of them will leave the trade to take up further training and education. Others may use the apprenticeship period to mark time until they can be employed in occupations which are only open to adults and for which successful completion of an apprenticeship in any trade might later be a positive factor when seeking employment. Still others, after qualifying as skilled workers or journeymen, will take up jobs within the same branch of industry, or in other industries, but at a semi-skilled or specialised level. Relatively few - a proportion which varies greatly from one trade and one country to another - will remain skilled workers in their original trade, or become foremen or mastercraftsmen.

Consequently, training regulations serve more than one purpose. In addition to providing standards of technical and vocational training they may:

- form a basis for protecting youth from abusive employment practices;
- be designed to give young people a chance to gain experience which will be useful to them even if they do not remain in their initial trade;
- be designed to give the employer, and the trade as a whole, a broad basis for selecting and training the future technical and supervisory staff and mastercraftsmen they require.

Dual relationships: training - production
theory - practice

A great proportion, if not the majority, of all European apprentices receive all their practical instruction on the job. Much has been said, and much is being written today, to decry such on-the-job training for being amateur ("Jane learnt from Nellie and Nellie never knew"), pedagogically unsound, a means of increasing profits at the expense of youth used as cheap labour, etc. There can be no doubt, however, that some of the finest craftsmen have been trained exclusively on the job (going to a vocational school for part-time courses one day a week or at night), and that some of the best craftsmen of tomorrow are today picking up their skills in this time-honoured manner.

Recent developments have given new reason for fearing that, in many trades, training exclusively on the job in production or maintenance is inadequate for attaining the standards set. This is particularly true with respect to the highly skilled crafts. As already indicated, the period left for practical training has been greatly reduced in many countries. The most extreme examples are found in the countries where related instruction in evening classes has recently been replaced by day-time classes on a working day without being compensated by a corresponding prolongation of the training period. Many employers and educationalists in the other countries feel that the current trend towards a shorter working week is equally detrimental to the quality of training and that the limit might soon be reached. An additional argument is provided by many highly mechanised and automated industries: the number of job stations on which apprentices can build up basic skills is diminishing and for this reason, as well as for many others, part of the training must be moved out of the workshop or the factory.

Vocational teachers and other education specialists add that an apprentice in a production situation can seldom be given his theoretical lessons at the right time for helping him to understand and master the practical experience he is gaining on the job, and that consequently the two essential components of vocational training become disjointed. They also emphasise that a logical build-up, step by step, of closely co-ordinated practical and theoretical instruction has become even more important today when the intellectual ability of the average apprentice has been falling but the technical content of the trades in many cases has been broadened and the amount of learning needed has been substantially increased. Slower learners, they say, have to learn more in a shorter time.

In the period before the second world war, and also since then in some countries, many vocational training specialists and educational authorities, as well as management in the larger undertakings, felt that the best solution to this problem was to be found in organising public or private school-based systems of training. As production could not be geared to the trainee's needs, there was no room for the young worker on the shop floor until he was fully trained.

Experience gained in school-based systems of training, e.g. in Czechoslovakia, has generally tempered the enthusiasm for giving full-course training up to journeyman level in vocational schools. Reforms introduced in the past few years have generally been directed towards establishing a proper balance between the need for a systematic build-up of learning on the one hand and, on the other, the necessity for apprentices to learn the standards of work required on the job. From a pedagogical point of view there is an additional argument: it is generally recognised that throw-away jobs rapidly destroy the trainees' interest and enthusiasm for their trade, yet it is difficult, even when permitted by the collective agreement, to give trainees in schools and training workshops work which has commercial value.

The proportion of each year devoted to practical training and related instruction respectively may vary according to country and also according to trade. The highest proportion of related instruction applicable to apprenticeship programmes was found in Czechoslovakia: one hour of related instruction and general education to two hours of practical work. It is interesting to note the progressive steps by which this ratio has been reached:

Year	Hours of related theory and general subjects	Hours of practical training
1918 - 1945	1	10
1947 - 1950	1	3
1951 - 1958	(all training given in state or company training centres and vocational schools)	
1959 -	1	2

Full-time courses at vocational schools usually have a higher proportion of related theoretical instruction. In the junior technical schools (LTS) in the Netherlands, for instance, the vocational element is insignificant during the first year (ages 12-13). The time devoted to skill training in the school workshops increases in the 2nd and 3rd year, possibly taking up 50 per cent of the school day. In making any comparison with practices in apprentice training in other countries, it is important to remember that the Dutch youngsters at the LTS, and many vocational school trainees in other countries, are younger than the average apprentice. If the full period of training in the Dutch case (three years at the LTS plus two or three years in apprenticeship) and the shorter period of general education are taken into account, the ratio between related instruction and practice of manual skills comes much closer to the standards normally applied in apprenticeship.

In countries where apprentices start their training at age 15 or 16, the ratio of theoretical to practical instruction is more likely to lie somewhere between 1 : 5 and 1 : 3. The general trend is towards ensuring that all trainees receive a minimum of 8 hours of related instruction and further general education per week of training and that even more time is devoted to related instruction and other school work (laboratory experiments, drawing, etc.) in trades in which the understanding of trade theory is deemed particularly important. In Denmark, certain trades which have revised their training programmes since the new apprenticeship Act came into force in 1956 have substantially increased the amount of instruction provided in school workshops, classrooms and laboratories until the sum total comes very close to the Czechoslovak figures given above.

Even in countries where the standard weekly total is 8 hours, larger undertakings having their own training shops or vocational school facilities often add several hours of classroom instruction in the company school to the hours spent at the public vocational school.

In some countries where it has not been found possible to change a standard pattern applied to all trades, there is a demand for a longer period of related instruction for all apprentices. In Austria and Germany, for instance, many trade unions and educationalists have demanded the extension of compulsory related instruction to two days a week instead of the present standard of one day a week. The choice to be made is evidently one of either extending related instruction in all trades or differentiating the period of related instruction between trades.

The reorganisation of training, and in particular the trend towards providing a greater proportion of theoretical instruction, has led most of the countries to undertake a re-examination of what is actually taught. Current discussion on the subject is less preoccupied with the principles to be applied than with the detail of application. That related instruction should impart specialised theoretical knowledge of the trade as well as provide further general education is virtually undisputed. To these two lines of related instruction is being added, on an increasing scale, a third: basic skill training given in the school workshop. Differences between the systems seem essentially to lie in the emphasis given to each of these three aspects.

The syllabus for automobile mechanic apprentices in Denmark provides an example of changes introduced in the content of training to adapt it to both the new organisational structure of apprenticeship (the changeover from evening classes to day-time instruction) and the increased technical content of the trade. Apprentices in this trade formerly had a total of 672 hours instruction in evening classes; the recently designed day-time course comprises 810 hours. Most of the additional hours are accounted for by a substantial increase in the number of hours devoted to automotive technology and business economics (Table 12).

Table 12: Denmark - Related instruction syllabus for automobile mechanics: comparison of evening course and new day-time classes

Subject	Instruction hours							
	1st year		2nd year		3rd year		Total	
	Eve.	Day	Eve.	Day	Eve.	Day	Eve.	Day
Technical drawing	70	65					70	65
Trade practice	42	50			14		56	50
Materials		16	28				28	16
Trade arithmetic physics	44	40	28	22	14	24	86	86
Danish and civics	28	28	28	36	28	36	84	100
Automotive technology	40	71	140	177	140	175	320	423
Business economics				35	28	35	28	70
Total	224	270	224	270	224	270	672	810

As has already been indicated, the new curricula introduced in Czechoslovakia since the 1958 reform provide for an exceptionally high proportion of related instruction: during the first two years apprentices receive three days of related instruction and three of practical training; in the third year the time spent on related theoretical instruction is considerably reduced. Table 13 shows how this time is utilised in the training of fitter-assemblers.

Table 13: Czechoslovakia - Practical and theoretical instruction for fitter-assemblers (3-year apprenticeship)

Subject	Hours per week			Instruction hours during full apprenticeship period
	1st year	2nd year	3rd year	
Czech (or Slovak)	2	2	-	160
Civics	1	2	-	120
Mathematics	2	2	-	160
Physics	2	2	-	160
Technical drawing	3	3	-	240
Materials	2	-	-	80
Technology	3	3	2	320
Machines and equipment	-	2	2	160
Work organisation and planning	-	-	2	80
Trade practice	18	18	40	3,472
Sports	2	1.5	-	140
Civil defence	1	0.5	-	60
Total	36	36	46	5,152

In the Netherlands, the training programme recommended by BEMETEL for training apprentice instrument mechanics (a 3-year apprenticeship preceded by three years at an LTS) comprises 3,060 hours of practical instruction and 1,440 of related theory and general education (Table 14, below).[3] Table 15 (below) gives the time-table proposed for theoretical instruction.

Table 14: Netherlands - Training syllabus, instrument mechanics

<table>
<tr><th rowspan="2">Subject</th><th colspan="4">Hours of instruction</th></tr>
<tr><th>1st year</th><th>2nd year</th><th>3rd year</th><th>Total</th></tr>
<tr><td>Manual and basic machine operations</td><td colspan="2">520</td><td></td><td>520</td></tr>
<tr><td>Handling of instruments and equipment</td><td colspan="2">680</td><td>600</td><td>1,280</td></tr>
<tr><td>Production work</td><td>420</td><td>420</td><td>420</td><td>1,260</td></tr>
<tr><td></td><td></td><td></td><td></td><td>3,060</td></tr>
<tr><td>General subjects</td><td colspan="2">720</td><td>240</td><td>960</td></tr>
<tr><td>Technology</td><td colspan="2">240</td><td>240</td><td>480</td></tr>
<tr><td></td><td></td><td></td><td></td><td>1,440</td></tr>
<tr><td>Total instruction hours (practical and theoretical)</td><td colspan="3"></td><td>4,500</td></tr>
</table>

Table 15: Netherlands - Syllabus of related instruction, instrument mechanics

Subject	Number of hours						
	1st Year		2nd Year		3rd Year		Total
	Per week	Total	Per week	Total	Per week	Total	
Arithmetic	2	80	2	80			160
Dutch	2	80	2	80	2	80	240
Electricity	1	40	1	40	2	80	160
Science	1	40	1	40	2	80	160
Materials technology	1	40	1	40			80
Technical drawing	2	80	2	80			160
							960
Instruments technology	0.5	20	0.5	20	1	40	80
Measurement of pressures	1	40	1	40			80
Levels	0.5	20	0.5	20			40
Volume and current	0.5	20	0.5	20			40
Temperature	0.5	20	0.5	20	1	40	80
Distance					2	80	80
Instrument setting					2	80	80
							480
Total	12	480	12	480	12	480	1,440

The above break-down of the related instruction given to Dutch instrument mechanics can be usefully compared with the syllabus for the six periods of related instruction given to apprentice radio mechanics in Denmark (Table 16, below), a 4-year training programme in which the instruction is given in periods of concentrated full-time training at a school. The break-down in Table 16 does not include a 3-week period of further training organised for journeymen in the fifth year after they began their apprenticeship.[4)]

Day release and block release

Courses of related instruction were originally arranged solely in evening or week-end classes. For social as well as for pedagogical reasons, the practice of evening courses for related instruction is gradually disappearing even in countries where attendance is not compulsory. It is being replaced by day-time courses during the normal working week with, in some countries, a legal obligation on the employer to grant his apprentices leave of absence from work to attend them.

Evening classes for apprentices were replaced by compulsory day-release classes in Germany as early as 1919. In Denmark, the law of 1956 stipulated their abolition with effect from 1 December 1964. Evening courses are still held in some Swiss cantons, but the federal law on vocational training stipulates that the practice should only be used in exceptional cases. In the Netherlands and the United Kingdom the choice is still open, but more and more employers (urged by their trade associations and, in

Table 16: Denmark - Related theoretical instruction for radio mechanics

Subject	Instruction hours per period												Total	
	1		2		3		4		5		6			
	P	T	P	T	P	T	P	T	P	T	P	T	P	T
Basic training and laboratory work	342	-	-	-	-	-	-	-	-	-	-	-	342	-
Advanced laboratory work and trade practice	-	-	90	-	96	-	90	-	90	-	39	-	405	-
Trade technology	-	108	-	120	-	120	-	120	-	120	-	45	-	633
Blueprints and technical drawing	-	24	-	6	-	6	-	30	-	30	-	-	-	96
Materials and equipment	-	24	-	-	-	-	-	-	-	-	-	-	-	24
Trade arithmetic and mathematics	-	42	-	36	-	30	-	12	-	12	-	-	-	132
Danish, civics, etc.	-	-	-	18	-	18	-	18	-	18	-	6	-	78
Review; tests	-	-	-	-	-	-	-	-	-	-	-	45	-	45
Total	342	198	90	180	96	174	90	180	90	180	39	96	747	1008

P = practice T = theory

the Netherlands, the training foundations) are agreeing to give their apprentices one day off per week to attend classes at technical schools during the day. In both the Netherlands and the United Kingdom related instruction is often arranged in a mixed form of evening and day-time classes, e.g. one half day and two evenings per week. A variant found in France, for artisan and building trades apprentices in areas with inadequate school facilities, consists of a programme combining classroom instruction and correspondence courses.

The rapidity with which day release is becoming generalised in countries where the decision is voluntary is illustrated by the fact that the number of apprentices and other young workers in England and Wales who were granted time off during the day for attending courses of related instruction grew from about 40,000 in 1939 to more than 260,000 in 1962. This development is the combined result of government recommendations, the conviction of many employers that day-time instruction gives better results in training, and trade union pressure. The figures for 1962 correspond to about 30 per cent of the boys and 7 per cent of the girls under 18 years of age employed by industry in England and Wales (statistics are not available for Scotland and Northern Ireland). They include a considerable number of "non-apprentice" trainees.

The commonest form of organised day-time instruction is for apprentices to attend classes one or one and a half days, or two half days, per week (8 to 12 hours per week). Such "day release" is the principal form in Austria, France, Germany and

Switzerland. It has become increasingly customary in the Netherlands and the United Kingdom. Czechoslovak apprentices attend classes three days a week during the first two years of training and one day a week during their third year (cf. Table 13).

Difficulties encountered in organising related instruction, and in some cases basic training also, on a one-day-a-week system of courses have inspired a development in some countries towards increased use of block-release systems under which apprentices attend full-time courses of related instruction and further education for several weeks per year. The principal reasons for adopting such a system are pedagogical and economic: to enlarge the capacity of the schools so that they become economically sound propositions; to ensure technically and pedagogically adequate courses for trainees living in sparsely populated areas or training for numerically small trades.

Under the previous system of evening classes the Danish authorities had been forced to set up and run close to 400 schools to cover the requirements of all trainees in an apprenticeship system which, at the time, took in only some 15,000 apprentices per annum. Only the biggest towns were able to arrange for adequate training in well-equipped schools; most of the schools were small and the teachers had to group into composite classes trainees from many and often extremely varied trades.

The obligation under the apprenticeship law of 1956 to organise day-time instruction for all apprentices provided the incentive for a complete reorganisation of the system. When the reform has been fully implemented the number of schools will have been reduced to about sixty. Every trade will have at least one annual course for each specialisation and each year of apprenticeship, given at a vocational school properly equipped for meeting the requirements of that trade. About two thirds of the schools will have boarding facilities so as to be able to receive trainees coming from all over the country.

Similar arrangements have been made on a voluntary basis for some artisan trades in most of the other countries, often in the form of interplant vocational schools in which the apprentices of the trade are brought together at regular intervals. The Swiss and the German building trades, for instance, have organised schools, with training sites attached, in which trainees are given initial full-time courses of related instruction and basic practical training. The schools also provide supplementary practical training to ensure that all apprentices in the trade have a chance to obtain a high level of qualification despite job variety limitations in some firms. This system has been adopted by various other trades in Switzerland which now organise initial basic training on a full-time basis for their apprentices.

The time spent on block-release instruction at school is not necessarily the same each year. The syllabus for radio mechanics in Denmark (approved April 1963) calls for three six-week periods in the first year of apprenticeship, one such period in the second year and two in the third - a total of 36 weeks.

Practical training in the undertaking

The mechanical and electrical engineering industries have been spearheading the movement towards streamlining in-plant training and rationalising practical instruction. In doing so, they have developed a two-phase concept of training: basic training, to be given in company schools or training shops, followed by a period of planned experience and training given on the shop floor. Many firms in Great Britain are today applying the term "formative training" to this latter period. Practically all large undertakings and a majority of middle-sized undertakings, including many factories employing as few as 10 apprentices, now at least have a specific area in the workshop reserved for training and a full-time instructor to supervise the progress made by apprentices and give them instruction in the basic skills and knowledge of their trade.

The individual undertakings have set the example for off-the-job initial training. It is being followed by an increasing number of trade organisations, employers' associations and other groups of undertakings organising interplant training centres in France and interplant workshops and central training sites in Germany and Switzerland. The Danish block-release courses with basic practical training included in the first-year syllabus of the vocational school form another example of much the same kind.

In 1958 there were 150 industrial training shops in Austria giving practical training to some 10,500 apprentices, or nearly one half of all industrial apprentices. In Germany, twelve years ago, there were about 1,000 training shops. By 1958 their number had risen to 1,600 and it is estimated that the corresponding figure for 1965 will be over 2,000. As in Austria, nearly half of all industrial apprentices in Germany were receiving at least part of their practical training in a company school or training shop. A vast majority of the shops have been set up in the mechanical and electrical engineering industries. Unofficial figures for these two industries, and for the metal trades as a whole, set the number of apprentices being trained in such shops as high as 75 per cent. 5)

The movement towards providing separate training workshops for apprentices is gaining ground in Great Britain also, particularly in the engineering industries. The Ministry of Labour, to illustrate the benefits to be derived from systematic basic training off the job, has organised full-time instruction courses for first-year apprentices in its Government training centres. A number of technical colleges in Great Britain run integrated courses of practical and related theoretical instruction.

The reasons most frequently given in support of this removal of basic skill training from the shop floor are as follows:

- the training workshop, which is separated from the dangers and pressures of regular production or maintenance work, makes it easier for the apprentice to transfer from school life to the active, working life of the adult;
- certain basic skills can be better and more systematically taught under the close supervision of experienced instructors

who apply modern didactical methods and use efficient teaching aids;

- good working habits are learnt more easily in a training workshop than under the pressures of production;
- the production process in highly organised large undertakings (piecework and assembly production lines) leaves journeymen and foremen little time for taking care of the apprentice and teaching him. A young apprentice without basic skills, and without at least rudimentary technical knowledge of what is going on, is likely to be a disturbing element in the production workshop.

The actual amount of time spent by apprentices in a company school or a special training workshop varies considerably. The minimum period is generally three or four months. In an inquiry carried out in 1963 it was found that a sample of young workers who had completed their apprenticeship in Bristol (England) in 1958, had spent a minimum of one month and a maximum of 30 on basic manual training in the training shop. The median period for the draughtsmen, fitters and machinists had been 6 months, for the toolmakers 9 months, and for the mechanics 12 months. Of the eight undertakings covered by the inquiry, only one did not have a special training section or school; three of them were planning to prolong the period of basic training to 12 months. 6)

In Germany two studies were made, in 1952 and 1958 respectively, of the number of months apprentices spent working in training workshops under specialised instructors. Table 17 shows that the period in each case varied between at least 3 months and a total of more than 24 months, with a few undertakings keeping their apprentices in the training shop for the whole period of their apprenticeship.

Table 17: Federal Republic of Germany - Time spent by apprentices in training workshops

Duration of instruction	Number of training workshops in percentages	
	1952	1958
3 months	1	8
6-9 months	4	16
12 months	30	32
18 months	14	12
24 months	27	14
More than 24 months (up to and including entire apprenticeship period)	24	18

A comparison of the figures for 1952 and 1958 shows that the median period spent in the training workshop is falling: in 1952 it was between 18 and 24 months; in 1958 it was 12 months. A third study, which was undertaken in Germany in 1963 but for which the findings have not yet been published, would seem, from verbal information supplied in the course of this inquiry, to confirm this trend.

There can be many reasons for this drop. The number of training shops has increased rapidly in the past few years, and most of the increase can be accounted for by the larger number of middle-sized and smaller undertakings making special arrangements for their apprentices. The greater proportion of middle-sized and smaller undertakings in the sample may have been responsible for lowering the median period.

The lower figures of recent years may also, in part, be the result of a change in training methods. It has been intimated that an increasing number of undertakings are now organising 12-to-18-month courses, often broken up into several periods, and that the number of undertakings giving apprentices all their training in a training shop is diminishing. This development is in line with the recommendations of the central training authorities such as the Chambers of Industry and Commerce and the Central Office for Industrial Training, which in most of their more recent training regulations suggest periods of basic and further training in the training workshop varying in duration between 12 and 18 months. 7)

The pattern of training that is evolving is therefore one of an initial period of basic training given outside production and lasting between 3 and 24 months, followed by planned work experience - the formative training referred to above - to initiate the apprentice into the rhythm and pressures of production. During the latter period the apprentice may be assigned successively to several departments in the undertaking so as to gain as wide experience as possible of his own trade as well as some knowledge of related trades.

Another co-operative way of organising practical in-plant training has developed since the second world war as part of the general rationalisation trend. Several employers pool their resources to institute group training schemes. The objective is to overcome the problem of too highly specialised training. The apprentice is under contract to one undertaking but is sent successively to several plants, according to a planned and agreed schedule, in order to gain experience and skills which he cannot acquire in the workshops of his own firm. In the United Kingdom the Engineering Industries Group Apprenticeship (EIGA) schemes have grown steadily and successfully since they were first started in the early 1950's. There are today over 600 member firms making up 41 groups and permanently providing more than1, 200 training places in the main industrial areas of the country.

With the reform introduced in 1958, practical training in Czechoslovakia incorporates several of the features described above. Undertakings with more than 200 apprentices are in principle legally obliged to have their own vocational school. If an undertaking does not have the facilities for training its own apprentices, it may arrange for them to be trained with the apprentices of other undertakings. Training in basic skills is closely related with trade theory and given in group training in the training workshops of the company school. The first two years' training emphasises school-based instruction, but the regulations encourage the use of production jobs and participation in regular work as often as may be pedagogically sound. The amount of time allotted to theoretical and practical instruction during these years is, as previously indicated, the same; the proportion of practical instruction increases in subsequent years. Rotation plans are established for giving the apprentices training in production during this period.

Teaching staff

The development and improvement of both related instruction and basic training in schools and special workshops has been hampered in all cases by a shortage of qualified teaching staff.

Practices as regards the recruitment and training of teachers vary between the eight countries. In some, where day-time instruction was introduced a long time ago and it is customary to emphasise the general educational value of the courses at the vocational school rather than their role in teaching particular skills, related instruction becomes basically a question of further education and it is natural to draw a parallel between vocational teachers and teachers in the terminal years of primary education or in secondary education. Vocational teachers in such countries are trained along the lines of general teacher training. Where evening courses are still included in the programmes of training, however, vocational schools generally employ a large number of part-time teachers drawn from the trades and from other education sectors. The arrangements often have an ad hoc nature and the number of full-time vocational teachers is relatively small. This was, for instance, the case in Denmark before the recent reform and is still the case in some cantons in Switzerland. 8)

Increasing use of day-time instruction and the growing number of apprentices have made it necessary for all countries to increase rapidly the number of vocational teachers employed on a full-time basis. Two principal lines of vocational teacher training have been followed. In Germany, teachers in vocational schools (giving exclusively related instruction) are recruited among graduates from general secondary schools. They should first acquire practical experience, or undergo a shortened apprenticeship in an industrial or artisan trade, and subsequently go on to take a university-level course at a pedagogical institute (attached to a technical university). This academic course lasts three to four years. They are accepted as teachers with a permanent contract, after a further period of practice teaching in vocational schools accompanied by further study of pedagogical and teaching methods problems.

In the United Kingdom, on the other hand, practically all vocational teachers have been recruited from among fully trained craftsmen and technicians who themselves have been trained in apprenticeship. Those who have had special training as teachers (some 20 per cent of the total) have usually gone to one of the government teacher training colleges, where the average age of the students is around 30 and the instruction emphasises pedagogics and methods of teaching technical subjects.

The vocational teacher trained according to the German system described above, unlike his colleague in the United Kingdom, has been expected to teach all subjects to a given class or age level of apprentice or adult trainee. Conceptions of his role and competence are undergoing a gradual change, however, and it is becoming more customary for him to specialise in certain areas and subjects.

The introduction of basic manual training in vocational schools and the expansion of training workshops in industry has in all countries increased the need for recruiting fully-trained craftsmen into the teaching profession. The latter have, as a rule, been placed in teaching jobs without being given further training.

There is an increasing awareness in all countries of the necessity for both instructors and teachers to receive training in teaching techniques and pedagogics before taking up such work and for teachers and instructors already in employment to be given further training in their technical specialisations and teaching techniques.

A system of periodical up-grading and up-dating by short-term annual courses was introduced in Denmark a few years ago. In Czechoslovakia the Institute of Technical Schools plans to organise courses for in-plant instructors and training workshop teachers. Similar courses have been organised on a voluntary basis by employers' organisations, private consultant firms and other training institutions in all the countries. In Switzerland, where the training of teachers has, until recently, been a cantonal responsibility and where teacher training standards, for this reason, tended to vary considerably, the new law has placed responsibility for teacher and instructor training with the Federal vocational training authorities. The latter had already begun to hold courses for teaching staff, on an experimental basis, before the new law came into force. In all the countries studied, however, current teacher shortages have had a seriously hampering effect on attempts to introduce systematic, generalised, further training and up-dating for vocational teachers.

Recognition of the need for higher pedagogical and technical standards among teachers and instructors in industry is another trend apparent in all the countries. The number of courses being organised for training officers and technical staff teaching in company schools is increasing rapidly. In Great Britain, the Ministry of Labour runs short courses for instructors from industry to initiate them in the use of modern teaching techniques; at the training officer level, the Ministry and the Education Departments are sponsoring short intensive courses at selected technical colleges. Participation in all these courses is voluntary.

Also relevant in this context is the requirement in Austria, Denmark, Germany, the Netherlands, Switzerland and, in principle, France, that artisan mastercraftsmen must hold a certificate of craftsmanship before they are allowed to employ apprentices. Courses arranged for journeymen preparing for the mastercraftsman examination now always include training in instructing techniques and in the special problems connected with apprentice training.

In the industrial and commercial sectors in Austria and Germany, skilled workers frequently sit for the corresponding mastercraftsman examination in the artisan trades. One industry in Germany - the printing industry - has introduced a special examination for highly skilled and experienced journeymen to become master-instructor (Lehrmeister) and undertakings are not allowed to take on apprentices unless they employ journeymen who hold a master-instructor certificate.

Supervision and control of training

All the eight apprenticeship systems provide for some kind of permanent supervision of and control over the progress of training and of the results obtained in training. This supervision is independent of the undertakings in which the apprentices are placed. It is usually carried out by bodies in which both workers and employers participate and in which, in some cases, the public authorities also take an active part.

On the whole, the control of training in undertakings is carried out by trade-sponsored bodies - Austria, Denmark, Germany, the Netherlands and the United Kingdom - or by state authorities (in co-operation with the trades) in France and Switzerland. In Czechoslovakia the control functions are shared between the Ministry of Education and the technical ministries and regional committees concerned. In France, there are separate organisations for industrial and commercial trades and artisan trades respectively. In the latter case the principal control functions in training are delegated to the trade-supported chambers of arts and crafts.

Related instruction is in all countries under the control of the educational authorities and supervised by inspectors of vocational and technical education.

The apprenticeship co-ordinator

Observations made during the inquiry all point towards the conclusion that the important question is not so much what body exercises supervision and control over training, as whether the body concerned has the means of carrying out continuing and effective control. Not much difference could be found between the attitudes of union apprentice supervisors, employer appointed apprentice specialists or state apprenticeship inspectors. In the prevailing situation of shortages of young workers, or at least of a balance between supply of and demand for apprentice places in most areas of Europe, the important factors are the physical ability (time available and number of apprentices to be supervised by each co-ordinator) and the personal interest and contacts of the person exercising the control.

The term apprenticeship co-ordinator is being used in this report as a collective expression for all such officials whatever their status. It was evident in the many interviews held with full-time apprenticeship co-ordinators that all three groups very rapidly develop much the same opinions professionnally. The same set of attitudes is often found among training workshop directors and instructors in undertakings.

These attitudes and opinions may be summarised in the following terms. The apprentice's training and well-being are the essential objective of all control work in apprenticeship. The apprenticeship co-ordinator resents any influence or action, whatever its source, which he feels can have a negative effect on the progress made in training and on the trainees' moral development and success in examinations.

The apprentice is the most vulnerable of the two parties to the contract, and needs to be defended. The small business employer not known personally to the co-ordinator is the one most likely to make abusive use of apprentices. He consequently needs to be closely supervised so that he does not provide substandard training or profit unduly from the work of his apprentices Other potential villains are the parents. The middle-sized and large-scale employer who has established a training workshop and appointed specialist instructors, can largely be trusted to do his duty by his apprentices unless experience shows that an unusually high proportion of them fail in the examinations.

Every apprenticeship co-ordinator admits that there are a few troublemakers amongst the youngsters, but avers that these are exceptions rather than the rule: they are boys and girls who need more attention and help than the others to get over their period of adolescence and grow into adulthood without doing harm to themselves or to their fellows.

Interviews with full-time apprenticeship officers in several countries gave illuminating material on the efforts being made to increase the educational value of training. The similarity between them in their frames of reference was striking. Asked the same questions - for instance, the causes of failure in examinations - they tended to mention nine examples of employers or groups of workers who, in one way or another, had failed in their roles or duties towards the apprentices, for every example of a trainee who did not measure up to the desirable standards. And even in this single case among the ten there were extenuating circumstances: true enough, the boy had not learnt but the employer or foreman had not had the time or the interest to handle the problem case in the appropriate manner at the appropriate time; parents or relations had insisted on the boy taking up a line of training, which did not suit his aptitudes or which failed to meet his interests; the union men had shown lack of understanding for the problems of young people. Parents and small-scale employers were most frequently cited as the persons at the root of the problem.

They also had their success stories: small shop employers who, despite limited means in regard to workshops, personnel and equipment, are educationally highly competent and who persistently turn out well-trained journeymen who pass well in the examinations. That a factory or a commercial undertaking employing several hundred workers has both a duty and a commercial interest in providing adequate training is not even discussed: it is taken for granted. Attitudes adopted in interviews may, of course, be modified in practice. In all probability, those currently voiced by co-ordinators are strongly conditioned by the present employment market situation in Europe.

There are also limits to what the apprenticeship co-ordinator can do and the influence he can exert. Small-scale employers and the parents of the apprentices are the parties most accessible to him, and consequently the persons on whom he may expect to have the greatest effect in his work as an adviser; difficult youngsters and large-scale employers may well prove harder to tackle and less open to success. These observations may explain, to some extent at least, why it is that references to the former recur with unfailing regularity in all discussions with and reports from apprenticeship co-ordinators, almost to the exclusion of all else.

Apprenticeship laws and regulations, and in many cases collective agreements also, usually provide for penal sanctions or other means of compulsion for cases in which either of the contracting parties fails to fulfil his obligations. Recourse is rarely had to such measures, however, and the number of cases taken to court or otherwise made the subject of formal action is insignificant.

The state-appointed inspector has little interest in using his power of prosecution as he has far more subtle means of suasion at his disposal for employers and other persons who fail in their duty towards an apprentice. Similarly, an official of a Chamber who may afterwards have to defend his action before a board composed of local businessmen will, for obvious reasons, think twice and try all other means before he sends a report on abusive practices to a government inspector for action.

The informal means of control are the ones which play the decisive role. Showing the register in which each employer has his own page or card with annotations on the number of apprentices trained in the undertaking who passed or failed the examinations, and the gradings they obtained in each subject, is often a more persuasive argument than any threat of prosecution. Close personal contact between apprenticeship co-ordinators and the local employment service, the vocational guidance officer, the school teachers, the unions and employers' associations are more efficient channels for convincing parents, apprentices and employers than are the official lines of communication.

Information on problems arising in the training of apprentices is received by the apprenticeship co-ordinators in many different ways. Some countries have formal inspection procedures. In the metal trades in Denmark, for instance, each undertaking applying for permission to take on apprentices is visited by two apprenticeship supervisors - one appointed by the employers' association and one by the union concerned - before final approval is given. The regulations also provide for a minimum of one visit by the two apprenticeship supervisors in the course of the period of training.

The same rule of periodical inspection at the work place applies in most trades, areas and countries. Even in the absence of formal rules, it is customary in all countries except Czechoslovakia and the United Kingdom, for undertakings employing apprentices to be subject to inspection by official or semi-public institutions.

A special visit or inspection is normally made only when circumstances warrant it: in the case of complaints on the part of parents, employers or apprentices; in cases when one of the parties proposes a termination of the contract, on the basis of information received from trade unions or labour inspectors, and in any other cases where there are reasonable grounds for believing that the situation is one which requires action. Since, in all countries, the area covered by each co-ordinator is limited, frequent contacts with the undertakings and particularly with those undertakings which are encountering problems in their training are the rule. On an increasing scale the task of the co-ordinator is being looked on less as that of an inspector than of a consultant for whom the main objective is to arrive at an appropriate organisation of training in each undertaking and to give effective assistance to both employers and apprentices.

CHAPTER IV - TRADE EXAMINATIONS

Trade examinations have mainly two roles: firstly, they are a visible means of controlling the effectiveness of training in the undertakings and, secondly, they are a means for the apprentices to obtain a nationally recognised qualification.

The value or importance of the latter varies greatly between the countries. In Czechoslovakia the acquisition of a skilled worker or journeyman certificate leads automatically to a change in wage level. Any subsequent examination passed has the effect of further improving the earnings of the individual.

Such an immediate correlation between wage level and examinations passed does not exist in any of the other countries. An apprentice who passes a trade examination automatically becomes a wage earner in those countries where a distinction is made between wages paid to young workers and allowances paid to apprentices. The level of pay is often also dependent on the age of the worker, however. In some countries persons who have obtained a skilled worker certificate may continue to work at a rate of pay considerably below that of an adult journeyman. On the other hand, even workers who have not completed an apprenticeship or passed a trade examination may still, in most countries, be accepted as skilled workers a few years later and then receive a journeyman's wage.

The main advantages conferred by a trade certificate are greater mobility - since the certificate is normally recognised by all employers - and improved status in the undertaking. It usually takes longer and is more difficult to reach the level of pay of a journeyman without having passed an examination and acquired a certificate.

In all other cases, except in the United Kingdom, participation in a final examination is a legal obligation written into the contract, and provided for in the apprenticeship legislation. The only exceptions are the short-term learnerships to be found in Germany, which do not lead to a complete trade examination.

Types and levels of examination

In addition to holding examinations at skilled worker or journeyman level, most countries provide possibilities for an examination at a higher level. This is the rule in the artisan trades where a mastercraftsman examination is open to journeymen who have acquired a certain number of years of additional experience in the trade and who have gone to courses offurther instruction, relating mostly to technical knowledge and business economics adapted to the requirements of small business. The new law in Switzerland has introduced two levels of higher trade examination, the traditional one of the mastercraftsman and a new level of business manager adapted to the requirements of small and middle-sized undertakings.

The artisan mastercraftsman examination in France comprises two levels: the "brevet de maîtrise" I and II. The first examination is based on a test of skill and knowledge in the trade. The second is concerned more particularly with the ability of the individual to teach the trade to others. French artisan apprenticeship examinations are somewhat different from those of the other countries: successfully passing the final apprenticeship examination (examen de fin d'apprentissage artisanal) does not immediately qualify the candidate for the official journeyman certificate (certificat de compagnon); he must continue working in the trade for a year or two before he can be recommended to the Ministry of Education for award of the journeyman certificate. The French and German examination systems for industrial occupations also have two levels. In France a young worker who has passed the examination for the CAP trade certificate (certificat d'aptitude professionnelle - CAP) may qualify, by attending evening courses and by working in the trade for at least two years, to sit for the higher trade certificate (Brevet professionnel). The Brevet is considered a valuable qualification for obtaining promotion into a supervisory grade.

Dissatisfaction of German industry with the type of courses organised for the artisan trades journeymen preparing for the mastercraftsman examination, which naturally had been planned to meet the specific requirements of small business, led to the institution in the early 1950's of a special industrial supervisor examination (Industriemeisterprüfung) and the organisation of two-year courses leading up to this examination. The courses are voluntary and do not automatically entitle those who pass the examination to higher pay or promotion. In practice, the great majority of those who have passed the industrial supervisors examination are, however, promoted to foreman posts or transferred to work in planning departments and other technical services; only a minority are concerned with training apprentices.

The examination system in the United Kingdom differs basically from those applying in the other countries because of a basic difference in concept regarding the role of apprenticeship. As previously indicated, many technicians and some graduate engineers in the United Kingdom start their career as apprentices and begin their technical education in craft courses organised at a technical college. Those who are successful in the craft courses go on to take additional courses at technician level. The semi-official examinations system of the City and Guilds of London Institute consists of three levels: craft level (previously called "intermediate"), advanced level and technological certificate level. The last mentioned is of technician level. Craft apprentices may also take courses qualifying them for certificates instituted by the Ministry of Education: the Ordinary National Certificate (ONC), which may be considered of lower technician level, and the Higher National Certificate (HNC) which corresponds to the diplomas issued by technical institutes providing technician training in other countries. These certificates are parallel to the Ordinary National Diploma (OND) and the Higher National Diploma (HND) awarded to students taking full-time technician courses at the technical colleges.

Most apprentices have to sit only for one examination at the end of the period of training. Intermediate examinations are often arranged but only as a voluntary measure to facilitate the identification of gaps in training.

A survey was made by the German Council of Industry and Commerce in 1964 to determine the extent to which intermediate examinations were being used in industrial undertakings and in the various areas of the chambers: 21 of the 81 chambers reported that they were conducting intermediate examinations in industrial training (mainly for the metal trades); 15 chambers reported on such tests being given in the commercial sector. The chambers also reported that most undertakings with training workshops of their own conduct periodical examinations to assess the progress made by their apprentices. Most of the chambers conducting such intermediate examinations indicated that results in the final examinations had improved since the practice of intermediate tests had been introduced. 1)

Some of the apprenticeship foundations in the Netherlands organise their final examinations in two parts, the first part being usually taken after two years of training, and the second in the third year.

Trade competitions

Somewhat different in purpose and scope are the tests in the national and international apprentice competitions which have grown up over the past few years. International competitions are held in a number of industrial and artisan trades and also for commercial occupations. Basically their purpose is to provide an opportunity for a comparison between countries of the standards reached by the best apprentices.

In the 1964 international trade competition held in Lisboa, Portugal, tests were organised for 25 industrial and artisan trades. Participants came from eleven European countries (including most of the countries covered by the present study) and from Japan. The competition is organised by a voluntary international organisation whose secretariat is located in Madrid.

Similar competitions in another field - foundry work - are organised annually for European apprentices and young workers by the European Committee of Foundry Associations.[2)] Commercial apprentice competitions are arranged by the German Federation of Salaried Employees (Deutsche Angestellten-Gewerkschaft - DAG).

How trade examinations are organised

The examinations are, in all the countries, controlled by boards of examiners. These boards may be composed of representatives of both public and private bodies, or consist exclusively of people belonging to the trade.

In Czechoslovakia, the boards are appointed by the director of the undertaking and are composed of supervisors, instructors, vocational teachers, union representatives and representatives of various committees and youth organisations. The examinations are consequently greatly influenced, within the limits set by the national examination standards, by the interests of the individual undertaking and its management.

In Denmark the boards of examiners for the different trades are composed of persons fully qualified in the trade, appointed by the Ministry of Education on the proposal of the employers' and workers' organisations.

The National Apprenticeship Board appoints inspectors for each of 71 administrative districts. The practical test pieces are judged by two inspectors, representing employers and workers respectively. Like the members of the boards of examiners, the inspectors must be fully qualified in the trade.

In France, the boards for the CAP examinations are appointed by the senior government representative at departmental level (Préfet) after consultation with the trade and professional organisations concerned. They are composed of vocational teachers, an inspector appointed by the public authorities and an equal number of employers' and workers' representatives.

A consultant on technical education, nominated by the Ministry of Education from among leading trade specialists is normally chairman. French artisan trades examinations are organised by the regional chamber of artisan trades. The board members include the president of the chamber (chairman) and representatives of mastercraftsmen, workers and teachers, and a representative appointed by the Ministry of Labour.

In Austria and Germany, the boards of examiners are appointed by the chamber concerned: the chambers of trade and commerce in Austria, and in Germany, the chambers of industry and commerce and chambers of the artisan trades respectively. In Austria they consist, as a rule, of at least four members, one of whom should be a representative of a chamber of labour. The normal composition of a board of examiners in Germany is one person representing the employers, an independent trade specialist, a workers' representative, with a vocational teacher as associate member.

Examinations in the Netherlands are organised at the national level by the apprenticeship foundation responsible for the technical area concerned. Board members are nominated by the foundation and appointed by the Ministry of Education.

Procedure in Switzerland varies from one canton to another, but an examination board is normally composed of at least one representative each of employers and workers respectively, and one representative of the vocational school in the area. In all cantons, the boards normally appoint trade experts - engineers, technicians, foremen and journeymen - to examine the work carried out by the apprentices during the practical test and to assess quality standards.

Participation in a board of examiners is, in most instances, an honorary appointment. Nomination is based primarily on the individual's experience and status in his trade or profession. In Switzerland, as a measure of co-ordination and standardisation, special courses for examiners are organised at both federal and cantonal levels. The courses are compulsory. With the same end in view the German Council for Industry and Commerce has issued guide lines to assist the boards of examiners.

Duration, place and technical content of trade tests

The practical test specimen in trade examinations is either a job selected by the employer (in Czechoslovakia and for most trades in Denmark, for the artisan trades in Austria and Germany) or a standard specimen job set by the competent regional authority or chamber or by the national authorities. In Switzerland, where the specimen job is, in principle, set by the cantonal authorities, the Metal Trades Employers' Federation agreed to prepare drawings for specimen work which are now used in examinations throughout the country.

The time allowed for carrying out the specimen job differs widely between countries and between trades. It may range from a minimum of 8 hours to a maximum of one week. The normal period in the metal trades is between 20 and 30 hours.

In France all examinations for the CAP certificate are held at vocational schools. In Czechoslovakia and Denmark, and in the artisan trades in Austria and Germany, the apprentice usually prepares his specimen job at his employer's workshop. For some trades in Denmark the examinations are held at a technical school. In the other countries (including Austria and Germany as regards industrial apprentices), and in other branches of activity, apprentices are normally assembled in a large factory or a training workshop made available for the purpose.

There are also considerable variations between the countries in regard to the duration and nature of the examination of related trade knowledge. For most industrial trades this examination includes tests in trade technology, the reading of blueprints and drawings, trade mathematics, and civics, the latter including safety and health regulations and labour legislation. The tests in each subject generally take between two and four hours.

In the Netherlands, where the organisation and control of practical training and related instruction are administratively separate, the 1966 Apprenticeship Act stipulates that the national and regional administrative bodies - the apprenticeship foundations - must co-operate closely with the schools through holding joint examinations covering the practical skills as well as the theoretical knowledge acquired by the apprentices.

The pass mark and the second try

Often complex weighting systems are used for determining the total number of points obtained by the individual trainee. In France and Switzerland, the examination of practical knowledge (the skill test) determines whether the trainee has passed. The trainee may be required to achieve a certain minimum as regards specific theoretical subjects (which vary according to the trade) in order to obtain a pass. As a general rule, the skill test is given more weight than the related theory test in final apprenticeship examinations.[3)]

Candidates who fail in an examination can normally come back after a period of six to twelve months for a second try. In such cases the apprenticeship period is generally prolonged by the extended term. The number of candidates who come back after a failure in the first examination varies greatly between the countries and, within a country, between the trades. In Switzerland, practically all unsuccessful candidates come back for a second try six months after the first attempt. In France and Germany the number of candidates sitting for a second time corresponds to about 60 per cent of those who failed.

Adaptation to changing requirements

Three different attempts were made in the course of the enquiry to evaluate the extent to which examination requirements are adapted to changing circumstances such as technical and economic change. The first attempt was made through an investigation of changes in the formal examination standards - the syllabi and examination requirements issued by public bodies in the various countries. This attempt was limited to certain metal trades which might be expected to be particularly sensitive to technical change, such as the trades of electrical and electronic fitter and general mechanic. A second approach was made through a study of the drawings and examination questions used for testing the level of technical knowledge and practical skill of examination candidates in the same trades. The third attempt consisted of a study of the results obtained in examinations; it was hoped to determine whether there had been any significant change over a given period in the percentage of candidates passing the examinations.

The results obtained in the first study of the officially recognised examination standards showed that, in practically all cases, the changes introduced are few in number and moreover so infrequent that they can hardly be said to follow today's accelerated pace of technical change. The time elapsing between two revisions of the examination requirements varies between countries, but it is often as much as 10 to 20 years; the changes made and new material put into the examination syllabi relate to technical processes and procedures which have already become generally accepted standards and methods in a wide range of undertakings.

Technically progressive firms often find it difficult to prepare their trainees for the examinations, since they lag behind current practice. It is not uncommon for managements to bring together the apprentices in the last three months of their apprenticeship in order to prepare them specifically for learning items which are likely to come up in the examinations but for which they cannot get any experience in the undertaking simply because the techniques are no longer used in the plant.

Examination syllabi consequently tend to give a somewhat conservative picture of trade practices. In most cases, they are unsuitable for a study of the gradual adaptations of examinations to technical change. Their requirements are so vaguely formulated that they leave a wide margin for interpretation by the persons who design the standard tests and set the questions. This vagueness serves two purposes: it takes account of differences in technical levels between undertakings; it also permits adaptation of examination specimens and papers to technical change.

The study of the jobs and drawings used in the examination of skill brought to light a marked change in line with requirements in industry.

The changes are not so clearly distinguishable as to the type of skill required for doing the job. There is a pattern of traditional tasks and operations included in the practical tests given to the apprentices in nearly all countries. In the metal trades, they have to show that they can handle a file, that they are able to mark their pieces precisely for machining and that they can carry out basic machining jobs. For electricians, wiring, establishing different types of circuits, and testing are standard elements in the job specimens. The main change that can be identified relates first of all to the tolerances. All the cases studied showed a trend towards far narrower tolerances and finer specifications in regard to surfacing and polishing. Parallel to this, there was increased emphasis on a more thorough examination of skill in and understanding of measuring techniques.

Boards of examiners are also quite evidently seeking to raise the required standards in regard to a theoretical understanding of processes and procedures, and to establish the link between trade arithmetic, trade technology and practical work.

Reference should be made in this connection to the increased interest which industry itself has taken in the trade examinations over the past few years, in particular in the establishment of tests and examination questions. Numerous examples were given in the course of the enquiry which show the effect of this change in attitude on the part of business.

The example of the Swiss metal trades employers' federation has already been given: in the absence of facilities at the federal level for establishing tests with country-wide application, the employers' federation stepped in and is now designing the specimen jobs for the major metal trades.

Other examples were found in France where, on the whole, local business lost interest in both training and examinations when vocational training was changed in the early 1940's into a predominantly school-based system. In the past few years, however, the major employers' associations have organised active participation in the development and management of the schools, and in training under apprenticeship.

They have been particularly active in these fields in four major industrialised areas of France and rapid and beneficial effects have already been obtained in these areas. In particular, the standards in regard to the quality of practical work to be carried out during the examinations were immediately raised in most instances.

The schools were alleged to have adopted an attitude of giving preference to theoretical ability and aptitude for abstract reasoning, letting the quality of the work done at the filing bench and at the machines drop. Superficially good results in welding for instance, were accepted without testing the depth quality of the weld.

In one area, industrial apprenticeship specialists introduced X-ray testing and breaking point controls on welding jobs carried out in the examinations. The number of passes obtained fell from about 59 per cent of the candidates in one year to a low of 10 per cent the following year. The results obtained under the higher quality standards rapidly rose in subsequent years, however. About 55 per cent of the candidates now obtain a pass mark - a percentage which, in French examinations, is considered to be normal. In the same area, the employers' associations have systematically worked through trade after trade and contributed to a stiffening of the requirements and to the establishment of tests which cover a wider range of the skills included in the training programme.

From the observations made during this study, two factors seem to play a most important role in this connection. The first one could be stated as the remarkable, perhaps even alarming extent to which the situation is dominated by a declared or tacit policy of laissez-faire. No one - employer, union or educationalist - seems to be entirely convinced that it is necessary, or even desirable, for the average youngster aged 18 to 20 - normal age of the candidate for the journeyman certificate - to have acquired proficiency in handling or operating all the most up-to-date processes and equipment. They all stress the need for him to learn a set of basic skills, but whether it is of any value for the apprentice to be trained on modern machine tools is still a matter of controversy. The equipment in training workshops and company schools often consists of reconditioned machines and tools which have served their time in the production shops. Training in new techniques is given after basic training, or even on completion of the apprenticeship.

The second factor is that employers tend to see the skilled worker or journeyman examination as an over-all evaluation of the aptitudes and abilities of the individual, useful mainly for determining the type of work he will be able to do in the future. Many apprentices passing examinations will, in a few years'time, have left the trade. This is a fact of which most members of the boards of examiners are fully aware. The examination is therefore often merely a means of differentiating between the craftsman who will have a chance to go on to study as a technician, the one who is likely to continue as a skilled craftsman in his field and perhaps later on be promoted, after further experience and training, to highly skilled jobs or to supervisory positions and, finally, the one who will eventually be channelled towards more repetitive work and semi-skilled tasks. Except in the case of France, where examinations are traditionally stiffer and a rate of failure of 50 to 65 per cent is often considered normal, this observation is valid for all the countries, even those which usually have a high rate of examination passes: trade examinations are used mainly as a gauge for separating the workers into these three major groups.

The third attempt to evaluate the results obtained in the examinations related to the trends in the number of candidates who passed the examinations. Despite observations to the effect that the average intellectual ability of trainees has been falling and that examination requirements tend to be more exacting, the proportion of examination passes tends to be remarkably stable. The examination statistics for Austria, for instance, give the results indicated in Table 18.

Table 18: **Austria - Percentage of passes in journeyman examinations in 5 major economic sectors, 1957-1962** [4)]

Economic sector	1957	1958	1959	1960	1961	1962
Artisan trades	93.3	93.1	92.6	93.1	92.5	92.0
Industry	91.0	89.6	89.5	88.5	88.0	85.2
Commerce	77.9	78.8	76.2	72.2	74.2	76.5
Transport	82.0	76.2	82.9	73.0	82.7	79.9
Hotel industry and related trades	94.4	95.0	92.3	90.1	92.8	94.3
All sectors	89.8	89.5	88.5	87.4	87.3	87.3

The biggest drop in the number of passes was in the industrial sector - probably a result of a stiffening of requirements. With the slight drop in the other fields, it had brought the average down from 89.8 per cent of all candidates in 1957 to 87.3 per cent in 1962.

In the artisan trades in Germany the success rate remained stable (around 90 per cent) over the same period. In Switzerland the success rate in the final apprenticeship examination during the five-year period 1959-63 shows only insignificant variations around the 95 per cent level.

Averages for the total number of candidates may not in themselves be of great value as statistical indicators in this context. In France, where, as indicated, the average success rate is comparatively low and can show great variations from one year to the next, the lowest success rate was in 1961 in the artistic crafts in which only 37 per cent passed whereas 69 per cent of the apprentices in food processing and 70 per cent of those in the leather industry obtained a certificate.[5] It is also generally held, and can in most cases be substantiated by available statistics, that the trend in recent years in all countries has been an increase in the number of straight passes and a decrease in the number of those who obtain higher grades. This applies both to the practical examinations and to the examinations of related trade knowledge.

In Austria, a survey was made to ascertain what apprentices obtained the best results in the journeyman examination for electrical fitter. It included all candidates sitting for the journeyman examinations from 1956 to 1959 and for the school year 1960-61. Average results in both theoretical and practical examinations were better in the case of apprentices who had received much of their training in training workshops than in the case of apprentices who had been trained mainly on the job.[6] The 377 apprentices who had had their basic training under specialised instruction in a training workshop, obtained slightly (7 per cent) higher marks in the theoretical examination and considerably (16 per cent) higher marks in the practical examination than the 195 apprentices who had been trained entirely on the job.

Statistics from the Netherlands show a similar trend. Apprentices who have spent three to four years in an LTS (junior technical school) and then completed their training in a shortened apprenticeship, on an average obtain better results in the examinations and are more likely to be promoted into supervisory jobs than the apprentices who have been trained in apprenticeship only.

Several reasons can be put forward to explain why trainees who are trained partly in schools or training workshops achieve better results than those who pass their whole period of apprenticeship in training on the job. One of them is that training workshops are normally found in middle-sized and larger undertakings which often are best able to attract an intellectually more advanced group of trainees who are likely to learn more rapidly and reach higher standards.

There is also, however, evidence that in some countries the middle-sized undertakings (employing between 100 and 500 people) do not necessarily either recruit the best trainees or provide the best training. A sample survey carried out in France showed that, contrary to the Austrian example, the middle-sized undertakings produced the apprentices with the lowest average gradings. 7)

There can be no doubt that, on the whole, systematic basic training under specialised instructors combined with relatively long practical training and experience on the job produces the best results and attracts better qualified trainees. The over-all results in French examinations show that the average marks obtained by the trainees in full-time courses at public and private vocational schools are superior to those obtained by candidates trained in apprenticeship mainly on the job. French metal trades' employers in the Lyon area managed to raise the average number of passes in the relevant CAP examinations by about 50 per cent after they established interplant training workshops for firms which had previously trained all their apprentices entirely on the job. This group of trainees produced considerably better results in the examinations than either of the two other principal groups of candidates: those who had received complete training in full-time vocational courses at school and those who had received all their training on the job.[8)]

CHAPTER V - THE ADMINISTRATIVE FRAMEWORK OF APPRENTICESHIP

Apprenticeship legislation

The nature and age of apprenticeship legislation varies greatly between the eight countries. Some of the basic provisions for apprenticeship in Austria and Germany, for instance, date back to the second half of the nineteenth century; the latest apprenticeship Act came into force in Switzerland on 15 April 1965.

Four countries have adopted new apprenticeship legislation within the last ten years: Denmark (1956), Czechoslovakia (1958), Switzerland (1963) and the Netherlands (1966). In Great Britain and Northern Ireland, new laws concerning vocational training were adopted in 1964; these Acts go beyond the mere regulation of apprenticeship since they cover the whole field of vocational training in industrial, commercial and agricultural undertakings. For a number of years there has been mounting pressure, particularly on the part of the trade unions, for new apprenticeship legislation in Austria and Germany.1)

In most cases the legislative texts make no attempt to deal with matters - such as lists of apprenticeable trades, syllabi, job descriptions and examination requirements - which will necessarily change with the process of technological and social evolution and development.2) Without exception they leave a large measure of freedom of action to the administrative bodies dealing with apprenticeship and to the partners in collective bargaining.

One feature is common to most apprenticeship legislation: a basic intention to protect the apprentice by limiting the freedom of the employer (imposing on him minimum standards of employment and an obligation to teach the apprentice) and providing for inspection services and other means for ensuring the observance of the terms agreed to by the contracting parties. Some of these protective measures are prescribed in general labour laws rather than in apprenticeship legislation. The more recent laws and amendments tend to stress related instruction and the educational aspects of apprenticeship. Evening classes, once normal practice under earlier legislation on apprenticeship, are being replaced by provision for day-time courses during the normal working week.

Nature and content of the indenture

The central instrument in the organisation of training under apprenticeship in all eight countries is the formal (usually written) apprenticeship contract - the indenture - which determines, for each case, the nature of the relationship between employer and apprentice, and the respective obligations of the two parties.

There are differences between countries in the degree of freedom of the contracting parties but the general trend is towards a more rigid and legally enforceable contractual framework.

In all cases the legislator has set certain minimum standards, laid down either in apprenticeship legislation, labour codes or youth protection Acts. In the majority of countries the bodies responsible for the administration of apprenticeship have drawn up model apprenticeship contracts so as to prevent possible abuses. The use of these model contracts is either only recommended - as in France, the Netherlands, Switzerland and the United Kingdom - or compulsory. This is the case in Germany, where the parties are obliged to use them if the document is to keep its validity as an indenture. But even when the use of the model contract is not obligatory the model is, as a rule, followed.

In general, the model contract recalls to the attention of the parties the various provisions in legislation or in collective agreements which apply to the conditions of work of the young apprentice, his rights and obligations in regard to related instruction, social security, special measures for youth protection, remuneration, etc.

The model contracts also contain clauses which aim at a unification of the concept of apprenticehip. They require specification of the period of training and the conditions under which it may be extended, inclusion or annexation of a trade description, instructions regarding the use of apprentices' reports book, acceptance by the employer, and in some cases by the apprentice, of inspection on the part of public authorities or trade representatives, the obligation of the employer to release the apprentice from work to attend prescribed classes of related instruction and to take the final examination, the duty of the apprentice to participate in such instruction and examinations, and any other obligations and duties on the part of the employer and the apprentice.

Finally, most model contracts also contain clauses relating to the conditions authorised for termination of contract and possible sanctions in the case of a breach of contract.

Contracting parties and registration of indentures

An indenture is always a contract between an individual employer or undertaking and a trainee. If the latter is a minor, as is usually the case, the indenture is also signed by his legal representative.

The group of employers entitled to take on apprentices is, in all countries, limited by law or practice to those who are able to prove that they have the qualifications and facilities necessary for providing full training. In Austria, Germany, the Netherlands and Switzerland, and in principle also in France, the employer in an artisan trade must possess a mastercraftsman certificate acquired through a special examination. In certain trades in Denmark an employer should submit an application showing that his workshop facilities, tools and equipment are adequate and that he has sufficient, and sufficiently varied job orders as well as the skilled personnel needed for providing competent teaching of the trade. Where there are no legal provisions of this kind, similar requirements have normally developed into practice; the authorities are placing increasing emphasis on the competence and ability of the employer to assume responsibility for training apprentices.

In most countries the regulations specify that the employer must be of good moral standing, have personal knowledge of the trade or employ competent journeymen, and possess adequate facilities for training. In Germany he must be at least 24 years old; in France artisan mastercraftsmen must have reached the age of 24, while industrial and commercial employers must be at least 21 years old before they may accept a minor as an apprentice.

The contract must also be signed or countersigned by the chairman of the foundation concerned in the Netherlands, and in some instances, in the United Kingdom, by the local apprenticeship committee.

In Czechoslovakia, Switzerland and the United Kingdom, the minimum age for concluding an indenture is 15; in the five other countries it is 14. The regulations normally specify, in addition, that the apprentice should have completed his period of compulsory education.

The Netherlands is the only one of the eight countries in which there is an upper age limit for apprentices. The new apprenticeship Act specifies that an apprenticeship contract will automatically terminate when the apprentice reaches the age of 27 years.

In Austria, Denmark, the Federal Republic of Germany, France, the Netherlands and Switzerland all indentures should be registered with public or quasi-public bodies.

In most cases the ultimate purpose of registration is that of ensuring control of the quality of training in undertakings. In all cases it includes administrative control of the contents and provisions of the contract. In some cases registration constitutes or presupposes approval by the authorities concerned or other bodies, of the employer as a man fit to take on responsibility for the training and employment of young workers.

The validity of the contract is often dependent upon registration which, in most countries, should take place within a specified period of time. A refusal on the part of the authorities to register a contract of apprenticeship normally means that the indenture ceases to be binding. In France, if approval has been refused,or if the employer has neglected to submit the contract to the authorities, the employer may have to pay a wage according to the minimum wage regulations, from which apprentices are exempted. In Austria and Germany only officially registered apprentices are admitted to the final trade examination; if the employer neglects to register his apprentice the latter can sue for damages.

The bodies responsible for registering the contracts vary from country to country. In Austria and Germany it is respectively the chambers of industry and commerce and artisan trades, in the Netherlands the apprenticeship foundations, in Denmark the public employment offices (after referral to the trade committee concerned), in Switzerland the cantonal vocational training authorities, and in France the chambers of artisan trades or the courts (generally the labour courts) or (for commercial and industrial trades and occupations) the mayor of the community which are the competent authorities. There is no registration of indentures in Czechoslovakia but the contract becomes valid only when approved by the placement committee of the undertaking. Some apprenticeship schemes in the United Kingdom provide for registration of the indenture by the national joint apprenticeship council for the trade, by group training officers or by local apprenticeship committees.

Termination of the contract

The apprenticeship contract can normally be cancelled only under specific conditions which are listed in the laws, regulations or collective agreements determining the contract situation.

Most of these regulations provide for a probationary period during which the contract may be terminated unilaterally by either party. In France, the probationary period is limited to two months; in Austria, Germany, the Netherlands and Switzerland it must not exceed three months and in Denmark the period is six months. In the United Kingdom, the customary period of probation (normally regulated by provisions in collective agreements) is three months. The law in Czechoslovakia specifically forbids the application of a period of probation.

Once the probation period is over, the employer (and, in certain respects, the apprentice) may not terminate the contract or otherwise be released from the obligations he has accepted in signing the indenture unless he has special reasons. Termination must normally be approved by the body which registered the contract. In certain cases the existence of a situation in which the indenture may be cancelled must be proved or established by public authorities or by a court.

In Austria a contract may be cancelled by mutual consent or on a fortnight's notice given by the apprentice. It may also be cancelled by the employer if the apprentice shows lack of ability for the trade or has committed a criminal offence. The apprentice may be released from his obligations if the work involved constitutes a danger to his health, or if the employer makes abusive use of his authority, is convicted of a crime or moves to another place.

In Czechoslovakia an indenture may be cancelled if the apprentice proves incapable or unwilling to fulfil his duties or is physically unfit to carry on the work involved. The apprentice may also leave if the employer neglects essential obligations under the contract, if he gains admission to an institute of full-time further education or if health, family or other important reasons make it impossible for him to pursue his training. Both the employer and the apprentice must give one month's notice, except when health reasons necessitate an immediate cancellation of the contract.

The Danish apprenticeship law specifies in great detail the conditions validating a cancellation of contract:

- death, imprisonment or liquidation of the business of the employer; transfer of the business to another locality; employer's abuse of authority or neglect of supervision;
- on the part of the apprentice, serious illness, refusal to attend related instruction, serious offence or disobedience; the apprentice may also be freed from his obligations if his family move to another locality;
- in the case of a female apprentice, the contract is cancelled if she marries, becomes pregnant or, when she lives in the employer's household, if the employer's wife dies or ceases to live in the home.

Accepted reasons for cancellation of contract in Germany include mutual consent, serious neglect of his duties on the part of the employer, immoral behaviour, employer's death, cessation of business and serious offence on the part of the apprentice.

In France a contract lapses automatically if either the employer or the apprentice dies or is convicted of a serious offence, or if the employer is called up for military service. A girl apprentice is automatically freed from the contract if the employer obtains a divorce, or if his wife or any other woman directing the household dies. A court decision is required for cancellation of the contract on grounds of serious neglect of obligations by either party, of violation by the employer of regulations protecting the apprentice, of the employer's change of residence, of conviction of the employer or apprentice for certain minor offences, of marriage of the apprentice or of persistent bad conduct or lack of aptitude on the part of the apprentice.

In the Netherlands a contract may be automatically cancelled by mutual consent. It may also be terminated when the apprentice reaches the age of 27, if the employer or the apprentice dies and if the employer is giving up his business or is convicted of a serious offence. Under certain conditions it may be cancelled if bad relations develop between employer and apprentice, and if the apprentice shows a lack of aptitude for the kind of work involved.

In Switzerland the contract may be cancelled when one of the contracting parties fails to fulfil his essential obligations, when the employer does not have the required moral character or technical qualifications, when the apprentice shows lack of aptitude or is unsuitable for the trade, or when continuation of the contract would endanger the apprentice's health or morals. It may also be terminated by withdrawal of approval by the registering authority if an inspection of the undertaking, the results of an intermediate examination or the progress made by the apprentice in his classes of related instruction shows that the apprentice lacks basic aptitude for the trade or is receiving poor training.

In most countries the initiative to terminate the contract should be taken by either of the two parties - employer or the apprentice either directly or through his guardian. Usually, any of the competent supervising bodies may also take the initiative. In the Netherlands an apprenticeship foundation may terminate the indenture if it finds that either of the two parties is not honouring the agreement. In most of the countries an arbitration procedure precedes any formal decision by a court or a board.

Obligations of employers and apprentices

The primary obligations of the parties to an indenture are naturally that the employer should teach, or provide instruction in the trade and the apprentice should learn it - not just the skills and knowledge required to carry out the various functions covered in the trade description but also the standards of craftsmanship, the working habits and the moral conduct required for a fully skilled responsible craftsman.

Most of the legal and other provisions dealing with the mutual obligations of master (employer) and apprentice are variations on this general principle. Older laws and regulations tend to emphasise the responsibility of the master not only for the work and training of the apprentice but also for the development of his personality and moral character.

As a corollary, most regulations oblige the apprentice to show diligence in his work, obey the employer and follow his instructions. In some countries these moral obligations go even further. In Austria, for instance, the employer is obliged to supervise the moral conduct of the apprentice within and outside the undertaking, and the apprentice is required to be loyal and industrious and to behave decently.

In Austria, Denmark, France, Germany, the Netherlands and Switzerland the employer is legally obliged to provide opportunities for the apprentice to participate in classes of related instruction. If such courses are organised during work hours which is normally the case, the employer is, in addition, obliged to release the apprentice from his work to attend them. In many cases he is obliged to do so without making any deduction in the wage or allowance paid to the apprentice. In several countries the employer must also arrange for registration of the contract, for enrolling the apprentice at the school in which he will receive related instruction, and making sure that the apprentice attends the classes.

In Czechoslovakia the undertaking is obliged to make arrangements for both the practical and the related instruction of its apprentices as prescribed in the syllabi.

Several laws, among them the regulations applying to apprenticeship in Czechoslovakia, Denmark, Germany, France and Switzerland specify that the apprentice may not be used for work other than that which is included in the trade description.

In Austria, France, Germany and Switzerland the employers are normally obliged to issue a certificate of termination of apprenticeship. Similar provisions are written into many collective agreements in Great Britain, and the apprenticeship certificate is issued, or the indenture is endorsed by, or on behalf of the appropriate national joint apprenticeship council.

Regulations applying in Germany, the Netherlands, and some apprentice schemes in Great Britain, specify that the apprentice should maintain a current record of his work (report book).

Administrative machinery

The machinery which has grown up in each of the eight countries for the organisation and administration of apprenticeship demonstrates the general concern for the educational content of the training, for the protection of youth in employment, and for the need to ensure that the technical content of the training is adequate for the requirements of the industries and fields of economic activity concerned. Variations are more the result of different national economic and legislative structures and historical development than indications of differences of opinion as to which body or authority might be best placed for carrying out the job. Recent changes seem to imply a trend towards greater centralisation.

All the countries have a national framework, supplemented by regional, state and local bodies and authorities. In most of them responsibility is shared between the ministries of labour and education, the former usually assuming authority for the conditions of work and employment of apprentices - the social aspects - and the latter the content of instruction - the pedagogical aspects. All the systems provide machinery for co-ordinating the activities of the authorities concerned. In countries where education is a state and not a national responsibility, i. e. in Switzerland and the Federal Republic of Germany, special provision is made for co-ordinating the activities of the various departments or ministries of education.

Where responsibility rests entirely with the Ministry of Education - e. g. Czechoslovakia, Denmark, the Netherlands - the system provides for consultation and collaboration with other ministries, departments etc. with regard to specific industries.

In six countries - Austria, Denmark, France (especially in the artisan trades), the Federal Republic of Germany, the Netherlands and the United Kingdom - a wide measure of authority in the control of apprenticeship is delegated to semi-public bodies. In all cases, employers' and workers' organisations, the teaching profession, trade associations, etc. are associated at various levels and to varying degrees.

The broad outlines of the national systems are described below.

Austria

Main responsibility for apprentice training in Austria rests with the Federal Ministry of Commerce and Reconstruction (Bundesministerium für Handel und Wiederaufbau); the Federal Ministries of Education (Bundesministerium für Unterricht) and Social Affairs (Bundesministerium für soziale Verwaltung) are also directly concerned.

Administration of apprenticeship is delegated to Chambers of Trade and Commerce (Kammern der gewerblichen Wirtschaft), which are the legal representatives of all employers. The Chambers act through specialised trade associations (Fachgruppen).

Specifically, the Chambers are responsible for: registering apprenticeship contracts, and related administrative tasks; determining, in certain cases, the duration of training and the ratio of apprentices to journeymen; developing examination standards; fixing examination and registration fees; conducting trade examinations and issuing certificates.

The Ministry of Commerce and Reconstruction exercises control over the activities of the Chambers through a trade inspectorate (Gewerbebehörde) attached to and appointed by the Ministry. The inspectorate must approve the most important of the measures taken by the Chambers; it also deals with appeals against measures taken by the Chambers.

The Ministry of Commerce and Reconstruction, state authorities (Landeshauptmänner) and district authorities are responsible for: determining the trades and industries which may not employ apprentices; withdrawing from an employer the right to employ apprentices; determining (in certain cases) the duration of training; issuing journeyman examination regulations and granting exemption from trade examinations; authorising compensation of time in apprenticeship by time spent in full-time training in school.

The administration of related instruction comes under the authority of the Ministry of Education.

Vocational guidance activities and the placement of apprentices in employment are the responsibility of the Ministry of Social Affairs. The Ministry is also responsible for supervising their working conditions in the undertaking.

Organised labour participates in the administration and supervision of apprenticeship through the Chambers of Labour (Arbeiterkammer), which are the legal representatives of the workers and the counterparts of the chambers of trade and commerce. The chambers of labour have the right to comment on: proposals regarding the duration of training, the ratio of apprentices to journeymen, new training regulations. They are represented on the apprenticeship examination boards, which are composed of at least four persons (one representing the chambers of labour, the other representing employers).

Czechoslovakia

The Ministry of Education (Ministerstvo školství a kultury) is responsible for the promotion, organisation, supervision and control of apprentice training in all fields of economic activity. The Ministry determines apprenticeable trades, conditions for the establishment of full-time and part-time vocational schools, the financial and material conditions of apprentices, rules governing admission to and duration of training; it sets examination standards. The Ministry is also responsible for approving teaching plans, syllabi and other teaching materials, etc.

The organisation, control and inspection of apprentice training within specific industries and undertakings is carried out by the competent ministry for the industry in question, acting in accordance with principles and policies determined by the Ministry of Education.

The co-ordination of apprentice training is assured through a Central Board of Advisers whose task it is to decide on major organisational aspects and make suggestions on basic measures and methods for the training of apprentices. The Board consists of representatives of the different ministries and central professional organisations.

The Research Institute for Technical Schools (Výzkumný ústav odborného školství) is an auxiliary institution of the Ministry of Education. Its main tasks are to do research into methods of training and to prepare proposals for teaching plans and teaching materials for the approval of the Ministry of Education.

At the regional level, co-ordination of training is in the hands of regional national committees whose function is to create those conditions which will be conducive to successful apprentice training. These committees work in close liaison with undertakings and schools.

Denmark

Over-all responsibility for apprentice training for all trades and occupations in Denmark is vested in the Ministry of Education (Undervisningsministeriet).

The Ministry carries out its functions through its National Apprentice Board (Laerlingsrådet). The Board has an independent chairman (appointed by the King-in-council) and a separate secretariat. It has administrative and supervisory functions and power of decision.

The Board is assisted in its work by an inspectorate of industrial and artisan education and an inspectorate of commercial schools.

Proposals regarding the duration of training, regulations governing in-plant training, and syllabi for related instruction are made by separate trade committees (de faglige udvalg) set up for specific industries and fields of economic activity. The trade committees are also responsible for inspection of apprentice training, for determining the suitability of undertakings for employment of apprentices, and for preparing trade examination standards. They operate under the supervision of the board.

The registration of apprenticeship contracts is carried out through the employment services (Arbejdsanvisningskontor) of the Employment Directorate (Arbejdsdirektoratet).

Participation of management and labour in the organisation and administration of apprentice training is ensured through the trade committees, which are composed of representatives of the mastercraftsmen and journeyman associations (for industry and the artisan trades) or representatives of employers' organisations and of associations of salaried employees (for commerce and other office occupations). There are 34 such trade committees: 31 for industry and the artisan trades and 3 for commerce and office occupations.

France

Responsibility for vocational training in general is shared between two ministries: the Ministry of Education (Ministère de l'éducation nationale) and the Ministry of Social Affairs (Ministère des affaires sociales).

The Ministry of Education is responsible for setting and issuing the national trade lists and examination standards for all youth training activities for industrial, commercial and artisan trades and occupations as regards both practical training and related theoretical instruction. It is also responsible for vocational guidance activities.

The Ministry of Social Affairs is responsible for the conditions of work and employment of apprentices, and for the supervision and control of practical training.

The Ministry of Industry and the Ministry of Agriculture exercise some of these functions with respect to apprentices in their respective sectors (nationalised industries and the artisan trades; agriculture and forestry).

The Chambers of Artisan Trades (Chambre de métiers) have a certain degree of autonomy and independence of action in the administration and supervision of artisan apprenticeship and in the organisation of courses of related instruction in this field. They establish training regulations for approval by the Ministry of Education, and are responsible for trade examinations in their sector.

The Chambers of Industry and Commerce (Chambre de commerce et d'industrie) have, in certain cases, taken action in the fields of vocational guidance, related instruction and practical training (e. g. organising inter-plant training centres).

At the national, regional and local levels, a number of public and quasi-public bodies and institutions have been set up to advise and assist the Ministries in the performance of their various training functions. The most important of these bodies are described below.

1. The Committee on Vocational Guidance and Training (Haut comité de l'orientation et de la formation professionnelle): determines the needs for training and vocational guidance in the context of extended compulsory general education. It is composed of 51 members, including workers' and employers'

representatives; the Minister of Education is its chairman.

2. National trade advisory committees (Commission nationale professionnelle consultative): draw up the lists of apprenticeable trades, determine examination requirements and regulations, establish syllabi for apprenticeship, further training and retraining. There are now 24 such trade advisory committees, each of which is generally divided into subcommittees specialising in particular trades and occupations. Each national committee is composed of representatives of the public authorities (8), employers (8), workers (8), the teaching profession (4) and parents (2).

The chairmen and vice-chairmen of the national trade advisory committees are grouped in a National Inter-trade Advisory Committee which co-ordinates the work of the committees.

3. The National Advisory Committee for the Artisan Trades (Commission nationale consultative de l'apprentissage artisanal): set up in 1950 to deal with the special problems of apprentice training in the artisan trades.

4. Area committees on technical and vocational education (Comité départemental de l'enseignement technique): recommend the communities in which courses of related instruction should be given and vocational schools should be established; decide on applications for exoneration from the apprenticeship levy. They are composed of representatives of permanent government services, local governments, the teaching profession and organ-

isations of employers, workers, mastercraftsmen and journeymen.

Federal Republic of Germany

At the federal level the ministry concerned with apprentice training is the Ministry of Economic Affairs (Bundesministerium für Wirtschaft), which exercises general supervision over industrial, commercial and artisan trades apprenticeship.

Regulations for apprenticeship in agricultural trades and occupations are issued by the state (Land) ministries of agriculture.

Related instruction and further education for apprentices, as provided at public vocational schools, is the responsibility of the state ministries of education; together, the representatives of these ministries constitute the Permanent Conference of Ministers of Education (Ständige Kultusministerkonferenz) which ensures a certain degree of co-ordination of the educational activities of the states.

Within this broad framework, two parallel administrative structures have developed, applicable to industrial and commercial trades and to the artisan trades respectively, for all administrative and organisational activities - preparing the trade lists, drawing up training regulations, registering apprenticeship contracts, etc.

For industry and commerce responsibility for apprenticeship devolves upon the German Council for Industry and Commerce (Deutscher Industrie- und Handelstag - DIHT), representing at the national level 81 chambers of industry and commerce. Training regulations for industrial and commercial trades and other standard training materials are prepared by the Central Office for Industrial Training (Arbeitsstelle für Betriebliche Berufsausbildung), which is sponsored by the DIHT in collaboration with the Federation of German Industry (Bundesverband der Deutschen Industrie) and the German Confederation of Employers' Associations (Bundesvereinigung der Deutschen Arbeitgeberverbände).

The Central Office for Industrial Training prepares the training regulations for industrial and commercial trades in consultation with ad hoc committees of experts, the competent Chambers of industry and commerce, industrial associations, employers' federations, trade unions and the teaching profession.

The same functions are carried out with respect to the artisan trades by the Institute for Training in Artisan Trades (Institut für Berufserziehung im Handwerk, Köln) and the Institute for Artisan Trades Technology (Handwerkstechnisches Institut, Hannover) under the responsibility of the German Association of Chambers of Artisan Trades (Deutscher Handwerkskammertag) representing 45 artisan chambers.

Approval of training regulations for industry, commerce and the artisan trades rests with the Ministry of Economic Affairs.

Vocational guidance and the placement of apprentices in employment are the responsibility of the Federal Institution for Placement and Unemployment Insurance (Bundesanstalt für Arbeitsvermittlung und Arbeitslosenversicherung), working through the local labour exchanges.

Netherlands

Over-all supervision of and responsibility for vocational training and apprenticeship is vested in the Ministry of Education (Ministerie van Onderwijs en Wetenschappen), which has full responsibility for the full-time training given in the junior technical schools (LTS) and the part-time courses of related instruction.

Organisation and administration of apprenticeship, as well as action to promote and develop it, are the responsibility of autonomous, semi-public foundations (Stichtingen). The foundations report to the Ministry of Education on administrative and budgetary questions and are financed by it.

The foundations supervise the drawing up of apprenticeship contracts and register them; they prepare national training standards, with the help of experts from industry; they advise, inspect and supervise undertakings in which apprentices are being trained; they conduct apprenticeship examinations. In 1963 there were some 30 national and 14 regional foundations. The former deal more with technical aspects of apprenticeship, the latter with its pedagogical and social aspects. The regional foundations are also responsible for ensuring a measure of "horizontal" co-ordination of the activities of the foundations operating within the provinces. Both types of foundation are composed of equal numbers of employers' and workers' representatives. They are assisted by local training committees composed of representatives of workers and employers and the placement services.

A link between undertakings and the vocational schools providing related instruction is ensured by liaison committees and expert consultants. The latter are employed by the foundations to visit undertakings regularly and to interview and assist apprentices, instructors and management alike. The consultants may recommend termination of an apprenticeship contract.

Switzerland

At the federal level the authority concerned with apprenticeship is the Ministry of Economic Affairs (Département de l'économie publique).

The preparation of training regulations and the administration of apprenticeship is carried out through the Office of Industry, Arts and Crafts, and Labour (Office fédéral de l'industrie, des arts et métiers et du travail - OFIAMT) of the Ministry of Economic Affairs and, as regards agricultural training, the Ministry's Department of Agriculture. The OFIAMT has a special section concerned with vocational training.

Specifically, the OFIAMT merely supervises the application of the federal vocational training Act, and only intervenes in such aspects of training activities as are reserved for federal action: training of vocational teachers and vocational guidance officers, measures to ensure uniformity in trade examinations, organisation of inter-cantonal courses of related instruction.

The establishment of trade lists, syllabi of related instruction, training regulations (conditions for training apprentices in undertakings, ratio of apprentices to journeymen, duration of training, training programmes) and examination regulations is done by the OFIAMT, after consultation with the appropriate cantonal authorities and trade associations and the vocational schools. The OFIAMT's proposals are submitted to the Federal Ministry of Economic Affairs for promulgation. The OFIAMT has power of decision with respect to related instruction syllabi.

All other organisational and administrative aspects of apprenticeship, including vocational guidance and the placement of apprentices, are the prerogative of the cantonal authorities. At cantonal level there may be a number of bodies and institutions concerned with such activities: vocational training offices, apprenticeship commissions, etc.

Related instruction is organised by municipalities, cantons, or trade associations approved by the cantonal authorities.

Participation of management and labour is assured at both cantonal and federal level through having trade associations and employers' and workers' organisations collaborate with OFIAMT in the preparatory work for the establishment of trade lists and training regulations etc. At the cantonal level, they participate in the organisation of examinations and setting of standards.

United Kingdom

Responsibility for all training in undertakings of young persons (apprentice and non-apprentice) in Great Britain rests with the Ministry of Labour. The Department of Education and Science in England and Wales and the Scottish Education Department are ultimately responsible for all technical training and education in schools and technical colleges under the direct control of the local education authorities. The implementation of the industrial training Act, 1964, gives additional responsibilities to the Ministry of Labour which works in close co-operation with the Education Departments. Similar arrangements have been introduced in Northern Ireland.

The machinery set up in Great Britain and in Northern Ireland under their respective industrial training Acts includes the establishment of industrial training boards for individual sectors of industry, with general responsibility for ensuring an adequate supply of properly trained men and women, at all levels, in the industry in question. Specifically, the boards are responsible for the quality and efficiency of industrial training, and for ensuring that the costs of training are more evenly shared between firms. The boards are composed of representatives of employers and workers in the industries concerned, educacational representatives, and assessors from the Education Departments and the Ministry of Labour.

By the end of March 1966, thirteen industrial training boards had been established in Great Britain covering the following fields: wool - iron and steel - engineering - construction - shipbuilding - electricity supply - gas and water supply - ceramics, glass and mineral products - furniture and timber - man-made fibres - carpets - knitting, lace and net. Together they covered about one third of the employees in all age groups in the country.

Co-ordination of matters of common interest to the various boards is assured by the Ministry of Labour, on the advice of the Central Training Council and its various working committee which have been set up under the Act to advise the Minister.

Syllabi of related instruction in Great Britain are prepared and issued by the Education Departments, or by public and professional bodies in consultation with the departments.

Vocational guidance and the placement of young people in apprenticeship and other employment in Great Britain is provided by the Youth Employment Service controlled by the Central Youth Employment Executive. The Executive is chaired by a representative of the Ministry of Labour; it includes representatives from the Education Departments. There is no compulsion on young people or parents to use the Service.

CHAPTER VI - COSTS AND FINANCING

Total expenditure for training an apprentice is composed mainly of three elements - payments for facilities and staff for related instruction (the part-time courses at a vocational school); costs of practical instruction, including reduced output and wastage caused by errors in learning new tasks; wages or allowances paid by the employer to the apprentice.[1)]

With very few exceptions, most of them relating to specific aspects and cases which will be described below, the same principles of cost distribution are on the whole applied in all eight countries. The public authorities pay the cost of part-time related instruction and also, in most cases, of basic and complementary practical instruction in full-time courses; the employers take on the costs relating to practical instruction within the undertaking. The individual employer may recover some, or even all of his expenditure by having the apprentices do production work and paying them wages or allowances which may be considerably lower than the wages he would have to pay an adult for doing the same work.

To the direct expenditure on individual apprentices should be added the continuing overhead charges inherent in running the system as a whole: costs involved in the preparation of training and examination standards, in operating inspection services and organising examinations, and many other items of continuing expenditure not specifically attributable to any of the three large cost items mentioned.

Overhead costs

In regard to the distribution of responsibility for overhead costs the eight countries may be divided into two main groups: those in which the over-all organisation and control of the apprenticeship system is based on a principle of autonomy and self-government and those in which the public authorities assume financial responsibility for these functions.

In Germany these overhead costs are paid by the undertakings, the general principle of administration being autonomy of business in running the system of apprenticeship. Membership in the chambers is compulsory and periodical fees are paid by all industrial, commercial and artisan employers to cover the costs of registration and supervision of apprentices and other expenditure items in the chambers' budgets. Supervising and controlling apprenticeship is not the only function of the chambers, and the level of fees paid is therefore not directly connected with the cost of managing the training system.

Membership of examination boards in the Federal Republic is an honorary, unpaid appointment, and consequently becomes another cost item assumed by the undertakings. The functions undertaken at the federal level are largely assumed by organisationally autonomous bodies and paid for by the central organisations of the chambers, the German Confederation of Employers' Associations and the Federation of German Industry.

In the final analysis all overhead costs are chargeable to the undertakings, in the form of dues and voluntary services paid by the firms whether they employ apprentices or not. A large part of the dues is paid to institutions with compulsory membership (the quasi-public chambers); most of the rest consists of dues payable to voluntary organisations, or costs incurred through voluntary acceptance of unpaid functions. A minor part of the overhead costs is recovered through the examination fees paid by the apprentices, but even these are mostly paid by the employers.

Federal and state authorities make substantial contributions towards meeting some of the overhead costs involved in running the systems of artisan and agricultural apprenticeship. Such contributions are considered part of the general support given by public authorities to these two branches of the economy. Their grants cover only a relatively small proportion of total expenditure attributable to overhead costs.

In Austria corporative organisations with compulsory membership assume a major share of the overheads, since the chambers play the central role in the administration of the system and voluntary organisations do not participate in it to any notable extent. Unlike the position in Germany there is also a workers' corporative organisation. Consequently, the workers share in the overhead costs.

In the United Kingdom the overhead costs are in practically all cases paid for by undertakings; in Denmark they are met by the employers' and workers' organisations (in which membership is not compulsory). The principal difference between the systems applying in Austria and Germany on the one hand and in the United Kingdom and Denmark, on the other, is that the two former countries have largely delegated these functions to "corporative" organisations with compulsory membership, while the systems in Denmark and the United Kingdom are built around organisations with voluntary membership.

In the United Kingdom practically all government action in this field has been based on the principle that the public authorities should limit their action to pilot activities and making some initial investments, mostly in the form of matching contributions, the other half being paid by industry. This policy had led the Ministry of Labour, for instance, to encourage associations of employers to appoint training development officers by making grants to defray costs during the first few years of an appointment or a pilot scheme. During this initial period the associations usually become sufficiently convinced of the value of the activity to be prepared to meet the full costs or, in the case of a group training scheme, the group becomes self-supporting on the basis of membership and other fee income.

The principal change in the system of financing brought about by the industrial training Acts of 1964 is that the new industrial training boards are obliged to impose a levy in their branch of industry with a view to distributing costs of training, including overheads for planning and administration, more evenly among undertakings.

Levies so far announced for the 1965/66 training year are: engineering - 2.5 per cent of salaries, wages, etc.; wool - 0.75 per cent; construction - 0.5 per cent. The Iron and Steel Board are imposing a levy of £7 (approximately $19.50) per employee as distinct from the proportion of wages and salaries to be imposed by the other boards.

The public authorities in Denmark take on a larger share of the overheads as registration of apprentices and over-all supervision of the system are functions of government offices and agencies. The bulk of overhead costs, however, is borne by the organisations of employers and workers. The de facto situation resembles that obtaining in Austria: membership in workers' and employers' organisations is not a legal obligation, as is the membership in the Chambers in Austria and Germany, but social conventions have made the organisations practically all-inclusive. An employer in Denmark would find it hard not to be a member of a trade or employers' association; a worker would consider it all but impossible not to be a member of a union. Consequently, the overhead cost of running the apprenticeship system in Denmark is distributed among employers and workers by means of dues charged by organisations, which contain practically all the persons directly interested in the training of new generations of workers.

In the four remaining countries - Czechoslovakia, France, the

Netherlands, Switzerland - responsibility for overhead costs is assumed mainly by public authorities.

Regulation, inspection and control of apprentice training in France and Czechoslovakia are mainly carried out by national authorities. The OFIAMT in Switzerland is a government agency. Cantonal apprenticeship officers and other persons concerned with supervision of training in Switzerland are public officials employed and paid by the cantons. Federal and cantonal legislation in Switzerland has in several cases modified, in practice, the general rule that the public authorities assume responsibility for the overhead costs. For instance, the organisation of the examination system is largely delegated to trade associations, and the expenses incurred in this connection devolve upon the association.

Between 90 and 95 per cent of the expenses of the training foundations in the Netherlands is covered by government grants. Apprentices pay a small weekly fee to the foundations - deducted from their allowances by the employer - but the aggregate of these sums is nowadays a negligible contribution compared to the total cost and may be considered an insignificant relic of the past.

Of far greater importance are the distinctions made in France in the apportionment of overhead costs of the training system between industrial, commercial and agricultural training, on the one hand, and artisan training on the other. Apart from contributions made to the general budget by means of the apprenticeship levy (to be discussed in some detail below), industrial, commercial and agricultural undertakings do not pay any fees directly connected with the overhead costs in the training system.

Artisan apprenticeship, on the other hand, is organised on a basis of administrative autonomy. The overhead costs of the system are partly paid for by membership dues to corporative chambers of artisan trades charged with responsibility for organising and supervising training and examinations. This system applies to small-scale undertakings, as an artisan in France is defined as a person engaged in manufacturing, repair work or the service occupations and employing not more than ten workers.

Some French trade associations which include both small and middle-sized undertakings have been given authority to impose special levies to pay for the training of personnel in their respective fields. The National Association for the Promotion of Vocational Training in the Vehicle Repair Trades, for instance (Association nationale pour le développement de la formation professionnelle dans la réparation de l'automobile, du cycle et du motocycle), manages a fund for training vehicle-repair workshop staff, based on a 7. 5 per mille special payroll levy. Similar arrangements have been made in the building and public works industries (3 per mille) where the fund is managed by the Central Committee for Co-ordination of Apprenticeship in Building and Public Works - (Comité central de coordination de l'apprentissage du bâtiment et des travaux publics).

These national associations have a quasi-public, corporative status and the proceeds of the levy collected from all undertakings within a given branch of economic activity are used for paying both overhead costs and expenses incurred in running inter-plant training activities.

Financing related instruction and other in-school training

The general principle applied in all the eight countries is that part-time courses of related instruction are provided free of charge by the public authorities. The principal differences between countries in this particular financial aspect concern the degree to which costs of related instruction are paid for by local taxation or by regional or national bodies.

In Czechoslovakia, where big undertakings are responsible for organising and running the schools, the government takes care of all expenses connected with the school-based training of the apprentices and the teachers' salaries. Apprentice training expenses not connected with the school are met by the undertakings. In Austria, Germany and the United Kingdom the establishment and management of vocational schools are in principle dealt with at the school district level and paid for from the municipal budgets. In Switzerland practices vary between cantons: as most of the cantons are small in area and population and contain only one or two large population centres, the provision of related instruction is generally dealt with at cantonal level. Financial policies in Germany are determined at state level and most states have systems of co-ordination or transfer of some of the cost of establishment and management of local vocational schools from municipal to state budgets. The general principle applied is that the state pays for the teachers while the municipality pays for capital investment and direct operating costs. The federal authorities do not contribute towards defraying such costs except for experimental and similar purposes.

The Swiss federal government may contribute up to 25 per cent of the cost of buildings (with a maximum of 2,000,000 Swiss francs, approximately $450,000, in each case) and 50 per cent of operating costs. The maxima authorised by the new vocational training Act are considerably higher than those payable under previous legislation. Provision is made for application of a sliding scale whereby the less wealthy cantons will, within the approved limits, benefit from a higher rate of subsidy.

Cantonal laws determine the proportion of costs payable by the public cantonal and municipal authorities and the employers. As a general rule, related instruction and other in-school training is provided free of charge, or against a nominal fee. In some cases contributions required of employers and their organisations may amount to a quite considerable share in total costs. This is particularly the case when the cantonal authorities have accepted responsibility for making arrangements which go beyond the mere provision of part-time related instruction, for instance in training for the watchmaking and building industries, fields in which full-time training is provided in schools.

In the United Kingdom the municipalities are reimbursed 55 per cent of total expenditure; no special rules apply to paying for the cost of vocational training which forms part of the local budgets.

In Denmark the apprenticeship Act of 1956 transferred major responsibility for planning and developing the vocational school system from the municipalities to the central government authorities. The latter, after negotiation with the trade committees, have determined the number of classes required at each level for each trade. These estimates provided the basis for preparing the plan for the reorganisation of the vocational school system, already described.

The schools are in most cases organised as autonomous institutions. Their expenses are covered by government grants up to 65 per cent of total cost. The municipalities contribute an additional 20 per cent, leaving the remainder to be met by fees paid by undertakings and, to a minor extent, by private donations.

In the Netherlands the organisation of the whole school system, including part-time and full-time vocational schools, is based on the principle of management by municipalities or by private, non-profit-making institutions. The national government pays by far the major part of the cost of establishing and running the schools. The amounts of public grants-in-aid are determined on the basis of a budget submitted by the school and approved by the authorities. An insignificant part of the cost is covered by fees, contributions from employers and donations from private persons and bodies.

In France the major part of the cost of the vocational school system is paid out of the treasury, which includes part of the monies collected under the apprenticeship levy mentioned above. The schools are established and their programmes planned by national educational authorities after consultation with other national planning authorities and regional bodies. Schools established under this system of planning are financed by public funds derived from the various sources of income of the national budget.

Around two thirds of the amount of the special apprenticeship levy, calculated at the rate of 4 per mille of the total payroll of undertakings, is offset against exemptions. The remainder is paid into the treasury. It should be emphasised that the amounts collected through the apprenticeship levy do not in any way influence the planning of government activities in vocational training. The exemption system, and the system of para-fiscal levies in some branches of activity do, however, greatly influence the establishment and financial conditions of private and inter-plant vocational schools.

Undertakings may, in general, claim exeption from paying the apprenticeship levy if they -

(a) renumerate apprentices (during first ten months of training and during periods of release for related instruction) and incur other expenses for their training (e. g. for special in-plant training arrangements);

(b) operate inter-plant training facilities in co-operation with other undertakings and participate in defraying their cost;

(c) give regular contributions or donations to vocational schools and other training institutions;

(d) are artisan firms employing not more than 10 workers.

The above exemptions are given in very schematic form. Exemption is also subject to the stipulation that the total expenditure must be made with respect to four approved categories of training (including skilled workers) and according to a fixed ratio which varies according to the branch of economic activity. Some firms are subject to different rules for exemption (the "normal budget" system). Agricultural undertakings other than agricultural co-operatives are not subject to the levy.

Undertakings and trade associations in France which operate their own school for indentured apprentices, providing both related and practical instruction, may also, by special agreement (convention) with the educational authorities, obtain reimbursement from the government for a major part of the operating costs of the school. These regulations, which are of recent date (1961), have as yet been applied in relatively few cases.

Voluntary contributions

Many employers and trade associations, in all countries except Czechoslovakia, make additional financial contributions to the training of their apprentices by providing supplementary facilities, not required by the law or regulations, for related instruction and basic and further training.

Apprentices frequently supplement the training they receive in the undertakings and at the vocational school by going to evening courses. Such courses often charge fees which the trainee must pay out of his own pocket. Many employers reimburse such outlays on the part of their apprentices.

The voluntary nature of such additional contributions precludes any valid assessment of their relative importance in the total cost of training. It is suggested, however, that the large number and variety of voluntary part-time courses and other supplementary training available to youth in employment indicate that the part played by voluntary independent action in this field is by no means negligible.

In all countries the public authorities are taking increasing interest in such activities and giving them financial support. Several German states have organised part-time courses for apprentices wishing to qualify for entry into full-time education at a higher level or merely to supplement their general education. These courses ("Berufsaufbauschule") follow the general lines of what is referred to in Germany as the "second channel of education" (Zweiter Bildungsweg).

Grants to trainees

Apprentices and other trainees who, through lack of facilities in their communities, have to travel long distances or live away from home in boarding houses, may receive government subsidies in Denmark, the United Kingdom and Switzerland to help them meet such expenses. In Denmark, apprentices going to vocational boarding school courses pay a maximum of 80 per cent of the allowance received from their employer for their board and lodging - any remaining cost is paid by the government. Cost of travel is paid by the government when the distance between home and school exceeds 7 km (4 miles).

Through the Youth Employment Service the Ministry of Labour in Great Britain operates a training allowance scheme to enable young people, who are suitable for training but are unable to find appropriate employment near home, to take up employment with training in another district. After deduction of certain agreed items of expenditure (e. g. payments by parents) and wages paid by the employer, the allowance leaves the trainee with a reasonable amount of pocket money.

Private foundations and state or cantonal grant systems in Austria, Germany and Switzerland have made similar arrangements for apprentices in these countries. In the case of trainees in certain trades in Switzerland, such payments may be supplemented by federal grants amounting to a maximum of 50 per cent of the sums received from other sources.

Grants to trainees are awarded on the basis of a means test except in Denmark, where all apprentices are entitled to them. A few philanthropic foundations in other countries base their distribution of fellowships on other criteria.

A number of factors - among them the type of trade for which he is training, the duration of the apprenticeship period and the trainee's personal background - are taken into account in *Czechoslovakia* in determining the allowance to which an apprentice is entitled with respect to board and lodging during the first half of the training period. Apprentices in some trades, and those with insufficient means will be given room and board free of charge. All apprentices pay part of these costs during the second half of their training, when their remuneration generally assumes the character of a real wage, but the individual trainee's trade and his social situation continue to be taken into consideration.

In *Austria*, *Czechoslovakia*, *Denmark*, *Germany* and *Switzerland*, employers are obliged by law to continue paying the full wage or allowance to the trainees during periods of release for related instruction. The same rule is generally accepted practice in the three other countries. The Danish law also obliges the employer to pay any school and examination fees directly connected with the apprenticeship.

When does an apprentice start to pay his way?

Several attempts have been made in the eight countries to determine how much of a charge an apprentice can be to an undertaking, to what extent the costs are changing, and whether and when employment of apprentices might constitute a source of profit to undertakings.

It is self-evident that no comparison can be made between the cost of training an electronic-instruments repair mechanic, for instance, who may have to receive instruction for two years or more in a company school before he can do any work of commercial value, and, on the other hand, an apprentice in a self-service food store who, after only a few days or weeks of instruction, is capable of taking on, during rush hours, some of the functions of the adult workers in the store. A turner apprentice under a 5-year contract in the United Kingdom has a longer time at his disposal for "paying back" the cost of his initial training than will have an apprentice in another country whose indenture is of only three years' duration but will in the space of that time earn him approximately the same recognised qualifications.

Studies on this aspect seem to agree on certain points. A metal trades apprentice who receives broad training is a charge to the undertaking at least during the first two years of training. If the margin between the pay given to apprentices and the wages paid to adult workers doing the same jobs is wide and the training period is long, the apprentice may, in the third and following years, pay back some of the net expenditure incurred during the first two. Apprentices in highly skilled trades, who must receive intensive instruction in a broad range of skills and make costly errors may during their apprenticeship constitute a net charge to the undertakings even when the training period is long.

A large German firm manufacturing electrical equipment estimated, after a careful study of all the factors involved, that the over-all net cost amounted to close to $500 per annum for each apprentice in 1959.[2]

United Kingdom studies (1962-63) suggested a net cost per apprentice in the metal trades of around $300 per annum, if cost and returns in the form of value of productive work were agreed over the full period of a five-year apprenticeship.

In these fields it may therefore be said that the cost of training is shared between the apprentice, the employer and the government (as net expenditure for training is deducted from operating profits).

Studies made in artisan trades in Germany in 1960 suggested that hiring apprentices may have been profitable to the employer in the past. The value of services rendered by trainees, estimated at the level of remuneration of an adult worker, was in all cases higher than the outlay (trainee allowances, social security costs and other direct expenditure). They also suggested, however, that the margin of profit was rapidly diminishing and that in 1963-64 artisan craftsmen, on an average, were hardly breaking even in their accounts for apprentices employed. The principal explanation given was that, owing to the shortage of young workers, wages and allowances for young people were increasing more rapidly than those of adult workers.3)

The wage or allowance paid to apprentices in Europe according to wage awards and collective agreements, is, generally speaking, low during the first years of training compared with the wage paid an adult. A 15-to-16-year-old apprentice in Austria, France, Germany, the Netherlands or Switzerland may receive as little as 10 per cent of a journeyman's wage. In all countries the basic rate increases according to the age or number of years served in apprenticeship. It reaches a figure between 70 and 90 per cent of an adult journeyman's starting wage in the last year or six months of the indenture period.[4)]

Employers in the five countries just mentioned emphasise that the remuneration paid to an apprentice is not a wage but a stipend or allowance awarded for training and study purposes. The amounts so paid out are exempt from payroll taxation in Germany; in France minimum wage regulations are not applicable to apprentices. In the United Kingdom, apprentices and young workers are paid according to the same wage scales, but at a rate well below the average rate applicable to an adult worker.

The level of the wages or allowances is also influenced by the regulations governing family allowances and tax reductions. As these apply to children in apprenticeship earning less than a set maximum, they may, in many cases, constitute an indirect subsidy within the apprenticeship system.

The amounts paid seem to vary less between countries than between different fields of economic activity. In Czechoslovakia the government applies a deliberate policy of differentiation according to the priority scale of the economic planner. Apprentices in high priority industries receive higher pay than those in low priority occupations. Other factors determine the levels of pay in the other countries, but the outcome is still one of great variations.

Apprentices in agriculture and in industries which have a large proportion of female workers, are among those which seem to have the lowest rates of pay. The building trades, mechanical engineering and other metal trades industries and mining are always at the higher end of the scale. In all countries this pattern corresponds to the pattern of wage differentials between different groups of adult workers, partly as a result of calculating the apprentice rates as a percentage of the wage of an adult worker (unskilled or journeyman) in the same branch of activity.

Considerations of net cost of training seem to have little influence on the relative levels of rates of pay. As indicated above, metal trade and mining apprentices, who do not produce much of commercial value and whose training is often costly as well as long, are among the more highly paid trainees. Apprentices in retailing, who can generally be trained at low cost by using slack periods in the owners' and other salesmen's work for instruction while allowing them to carry full load during rush hours, are in all countries in the low paid group.

One reservation should be made with regard to the wage data and rates quoted. It is not at all unusual in several countries for the payments actually made to apprentices to be quite considerably higher than those fixed by agreements and wage awards. In Austria, Germany and the Netherlands competition between employers for apprentices is so strong that it has become common practice in several industries and trades to increase the wages of apprentices by circumventing the wage regulations in various ways. In Germany, published sources and information obtained during this inquiry gave widely divergent figures for the minimum and maximum rates of pay for apprentices. The latter ranged between DM 250 and DM 400 per month (DM 4 = $1); the lowest wage cited was DM 65 per month, but other authors indicate that few apprentices, if any, get a monthly pay of less than DM 100.

Who pays for training?

The above description and analysis of the financial aspects of vocational training leads to certain general conclusions regarding the interrelationships between the four parties directly concerned - employers, public authorities, trade unions, the apprentices themselves. By and large these conclusions are common to all eight countries.

With the exception of the grants-in-aid which may be paid to company schools in France, the exemptions allowed under the apprentice levy system, and some other cases of minor importance, employers may not, in any of the countries, claim reimbursement of their expenditure connected with practical training. The fact that these outlays are considered business costs for taxation purposes seems, in many cases, to have some influence on employers' decisions to undertake such activities and to that extent may be said to constitute a government subsidy to in-plant training.

In all the countries, the public authorities have taken on full financial responsibility for the cost of related instruction and further education forming part of their apprenticeship systems. They tend towards assuming an increasing share in the cost of basic training. Employers are taking on increasing costs in practical training.

Apprentices, who in the past may have substantially helped to defray the costs incurred in their training by doing work at a remuneration lower than that of adult workers doing the same job, are paying a decreasing part of the total training costs. In some fields of work, apprentices are still low-paid labour but the actual number in such a position is diminishing.

Trade unions are taking an increasingly active part in the organisation and control of training. Their financial share in total costs, however, is relatively small in most countries.

CHAPTER VII - SUMMING UP: SYSTEMS IN TRANSITION

The basic patterns of the institutions of apprenticeship in the eight European countries covered in this study are all highly traditional in their general structure. Some of the laws and regulations which today govern the relationship between master and apprentice and determine the conditions and fields of training, date back to the second half of the 19th century; many of the laws and regulations in force today are more than 25 years old.

Considered in an international context, few - if any - of the provisions written into the new apprenticeship and vocational training Acts which have recently been adopted in Czechoslovakia, Denmark, the Netherlands, Switzerland and the United Kingdom, and hardly any of the proposals for new legislation, which have been made in Austria and Germany, can be considered really new.

Some of the changes introduced may have been revolutionary in the country concerned, however. The adoption of day-time related instruction in Denmark, the extension of apprenticeship to the industrial and commercial fields in the Netherlands, the new powers given to public authorities and the introduction of a levy system in the United Kingdom - all these measures have constituted profound changes in the national pattern of training. Similar measures, however, had already been introduced elsewhere a long time ago.

Comparative analysis of the legislative texts adopted in the 1950's, or even more recently, and the regulations already existing in other countries, shows that the essential nature of the developments during the period after the war is not so much that something new has been added but that a number of basic principles have gained over-all acceptance. What may previously have been only partially applied in each country has become generalised, and apprenticeship practices are internationally more standardised today than they were 30 years ago.

The training regulations - the trade descriptions, training syllabi and examination standards - which determine the pattern of training in individual trades are in many cases old or have changed little, despite the rapidly accelerating pace of technical, social, educational and economic change which has characterised economic and social life in all eight countries in recent years.

The old administrative patterns have also remained largely unchanged in most countries. The number of people employed in the administration and control of training has increased rapidly but administrative responsibility remains divided among a great number of authorities, delegated to numerous semi-public and private bodies whose actions are not necessarily co-ordinated or set within unified policies. Apprenticeship has been influenced by educational change, social legislation and trends in manpower policies without ever becoming a central issue in any one of these three fields. Basic questions of co-ordination have often remained unsolved.

How then, in these circumstances, has it been possible for apprenticeship not only to retain its traditional central position in the training of youth in the eight countries but, in fact, to expand into new areas of economic activity and take on a rapidly increasing proportion of the adolescents leaving school before the end of secondary education?

The first explanation is the great flexibility of the systems as such. Despite the great volume of laws, regulations and agreements existing in each country, there is in all cases considerable freedom of action permitting the employer and the controlling authorities to adjust training plans and methods to new technical requirements and the demands of new groups seeking training.

A second explanation is the traditionally recognised status of the journeyman. Success in an examination, a trade certificate to show, is considered proof of educational achievement in many respects comparable to a certificate from a middle-school or secondary school. As the European education systems have remained largely selective, taking into the general, technical and commercial streams of secondary education only some 10 to 20 per cent of young people in the 16-to-18 age group, apprenticeship became an alternative way of attaining recognised educational standing.

A third reason is the general shortage of manpower. Offering a course of apprenticeship in a recognised trade has become a means of attracting young workers. Employers, pressed by skilled worker shortages and competing with each other for the best among the school leavers, have been willing to make considerable investments in the training of youth.

But in the process the basic purpose of apprenticeship is changing. It is no longer essentially a system of training for a career in a particular trade. It has increasingly taken on the role of a system of work-oriented education for out-of-school youth. This is illustrated by the choice of trade exercised by the trainees themselves. More and more, young persons take up training in one or other of a short list of some ten to twenty broad and basic trades. Scores, in some countries hundreds, of traditional trades - trades which are still fully "alive" as lines of economic activity - are being deserted or manage to recruit only a handful of the trainees they require.

If mere continuance of the trade is used as a yardstick, some trades are training too many, others are training too few. It has been seen, however, that continuation in the trade is, in many cases, no longer either the intention or even the normal outcome of training. Many young workers who gain recognition as journeymen in one of the overcrowded trades will go on to other types of work after they finish their apprenticeship. The deserted trades will have to find new ways of ensuring sufficient recruitment to maintain their service, or else will have to change their methods of work so that long-term training of young people will no longer be required.

The larger and middle-sized undertakings are the ones which train the majority of young people today. Small workshops and artisan shops have a hard time finding suitable young people to train.

Continued concentration to a few trades, many of which require training in a wide range of skills, and the expansion of training in larger and middle-sized undertakings which can attract trainees from a larger area and offer opportunities for complete training, seem already to have greatly helped in diminishing the importance of one basic weakness inherent in all apprenticeship systems: that a young person's choice of trade is unduly influenced by the narrowness of the local employment market.

There was room for rationalisation

This vitality of the apprenticeship systems is evident in their remarkable adaptability to new situations. The characteristics of the group from which apprentices are recruited have changed. Apprenticeship intake no longer consists of the elite of the early school leavers, but the average run; in many countries it is even largely the below average school leaver.

The time available for training has decreased as annual working hours have been shortened without introducing a corresponding prolongation of the period of apprenticeship. Working conditions have changed and so have the conditions of training.

Still, despite all these changes, the levels of knowledge and skill attained in training today, in so far as they can be measured in terms of the results obtained in the examinations, are in many cases superior to those of a few years ago. The average levels appear to be stable.

One possible explanation for this apparent contradiction is that there was previously much waste in the training given in apprenticeship. Many recruits were intellectually overqualified for their trade; if society had needed or allowed it, they would have been able both to take on more demanding tasks and to go on further in their education.

With overqualified trainees and plenty of time available, there was not much incentive for rationalising the training process. The five years of fifty 48-hour weeks and additional evening classes worked by a fitter apprentice in the United Kingdom some 10 to 15 years ago gave ample room both for acquiring a first-class level of skill and for doing much production work not strictly needed for training purposes. This observation holds true even in countries in which the period of apprenticeship has traditionally been shorter.

Spontaneous promotion and partnership

Perhaps the most important feature in this process of rationalisation has been the increased interest taken by industrial and commercial employers, by employers' organisations and by associations of artisan craftsmen and other bodies representing business interests, in promoting training in apprenticeship and in improving methods of training. Today, most employers' associations have their own training counsellors who guide and advise undertakings in the organisation of training and the efficient application of the rules and regulations governing apprenticeship. They have given support to central institutions for the preparation and modernisation of training syllabi, teaching aids and programmes of instruction. Many of them, independently or in co-operation with the public authorities, have established schools and training shops for basic and advanced training, and for additional related technical instruction to supplement the training given in undertakings and the trade courses of the vocational schools.

Many schools have been accepting a new role. Some of them, schools which 15 years ago only provided related instruction, have introduced new courses for giving basic practical training to apprentices. Others have arranged courses in which apprentices receive systematic further training in particularly important aspects of their work, or supplementary training in skills which are difficult to teach on the job.

Modifications in the syllabi of related instruction, generally the result of close co-operation between schools and local business, have rendered related instruction a more efficient tool in support of the skill training process.

Trade unions are today taking increased interest in promoting vocational training for out-of-school youth. They are encouraging a trend towards broad and basic training valid for a number of specialisations, and are demanding increased public control over training and union participation in the policy-making process. Restrictive practices, which once were fairly common, have largely been abandoned. It would appear that the fears of unemployment and undue competition from apprentices as cheap labour - fears which originated in the 1930's - are beginning to fade away.

The administrative units responsible for the control and development of training practices have generally been reinforced both in the public services and in the semi-public bodies which perform these functions in several of the countries. Their role too is changing: inspection and control are being replaced by consultation and advice.

There is clear evidence that the public authorities, employers and trade unions are today more willing than they once were to co-ordinate their efforts and to co-operate in promoting and developing apprenticeship and other forms of vocational training. Admittedly, many attempts at organising such co-operation have failed. Several examples were found in the course of the inquiry of co-ordination committees which existed only on paper, of representatives of trade associations and unions who attended meetings but made no contribution to the work in hand. Such examples of lip service only being paid to the idea of a co-ordinated effort or partnership in the interests of youth, the trade or training generally, were on the whole, exceptions. Both at national and international level an intensive effort of co-ordination is being made and all the interested parties are playing an active part.

On all sides new research projects are being launched to find solutions to pressing organisational and pedagogical problems. Such research may be purely national, such as experiments with new teaching methods (e. g. teaching machines) or the efforts being made by the industrial training boards in the United Kingdom to improve training in their respective industries, or international. An example of the latter is the work which the European Economic Community has been doing for the past few years with a view to finding ways and means of co-ordinating and improving the systems of training operating in its six member countries, three of which - France, Germany and the Netherlands - have been included in the present survey.

This spontaneous expansion of research and intensification of international comparison would seem to be all the more important since public discussion of apprenticeship tends to be heavily conservative and burdened by traditional views and set practices. Opinion is also influenced by out-of-date boundaries between trades which have found their expression in organisational distinctions. International comparisons can be powerful means for breaking down these obstacles to further rationalisation.

Future change will require reorganisation

Because of the waste which existed previously, it has so far been possible to carry out this rationalisation without introducing much change in the structure of the apprenticeship systems. The point may now have been reached, however, when the possibilities for rationalisation within the system will soon become exhausted, and basic changes in the structure will be required if a healthy and dynamic development is to continue.

With a steadily rising average school-leaving age, it will no longer be possible to recruit all apprentices at the minimum school-leaving age. The number of such early school leavers will decrease rapidly and the average intellectual ability of many of the new recruits to apprenticeship will be below the minimum level required in some trades. In addition, many highly skilled trades will gradually have to raise their entry requirements.

Some differentiation has already been introduced through voluntary action on the part of employers. Only in a few cases, however, have they been allowed to shorten the period of apprenticeship for the youngsters who enter at a higher educational level.

Two examples may be used to illustrate the type of problem which will probably have to be solved in most countries in the near future. In France, the minimum school-leaving age is to be raised from 14 years to 16 years. The artisan trades and many small commercial firms would nevertheless like to continue being able to accept 14-year-old apprentices for training. Industrial employers, on the other hand, are strongly in favour of raising the minimum age for admission to not only apprenticeship but also full-time vocational training in schools. They do not, however, propose raising it above the age of 15. Similarly, there is general acceptance of the principle that the full-time courses at vocational schools should last two years (instead of three, as at present), provided that final recognition as a skilled worker would only be granted after further training or specialisation given on the job for a minimum period of 12 months.[1)]

A recent study in Germany covering nearly 4, 000 apprentices in ten industrial, commercial and artisan trades provides the second example. The study concludes by suggesting that the duration of training has become too standardised in Germany (three to three and a half years), and that the period needs to be extended for some trades and occupations (e. g. for automobile mechanics and electricians) while for others it could be shortened (e. g. masons, bakers, butchers and sales girls). The report suggests, in addition, that training exclusively within the undertaking should be abolished, that a period of basic training at school or in a training workshop should be introduced, and that the period of formal training within the undertakings should be set at a minimum of one year and a maximum of three years.[2)]

It is doubtful whether it will be possible to retain the traditional career monopolies for workers who have acquired journeyman or skilled worker qualifications. The rapidly increasing demand for technicians and higher technicians has already forced the educational authorities in several countries to modify their practice of demanding full craftsman training for entry into technician training institutes. An increasing number of technicians and higher technicians in the United Kingdom are today qualifying for a technical college diploma, which can be acquired only through full-time study, and the proportion of persons holding a technical college certificate (i. e. who are trained by a combination of apprenticeship and evening courses at the technical colleges) is decreasing. New lines of technician training have been opened in the technical schools in Austria, Denmark and Germany, while in Czechoslovakia technician training was not included in the general transfer of responsibility for vocational education from the schools to the undertakings. In these new lines, previous requirements for long-term practical training in production and maintenance work have either been entirely abolished or been replaced by relatively short periods of practical experience sandwiched between full-time courses at school.

It is also an open question whether it will be possible in future for some of the artisan trades to recruit apprentices capable of going on to take the master craftsman examinations. Trade emphases are changing. Manual dexterity and trade knowledge are today sometimes less important in small industries and artisan shops than marketing skill, advanced technical knowledge and an understanding of mechanical and electrical processes and machines. Promotion from the ranks may no longer provide the leadership required. Massive elimination of career possibilities may, however, have harmful repercussions on the interest taken by adolescents in taking up training in skilled work. Many of the middle-school leavers and other above average youngsters who go into apprenticeship today would certainly be lost to the trade if the links between apprenticeship, technician training and business management positions were to be broken. Still, the trade will need them as supervisors.

There is a risk that higher training costs will gradually diminish the employers' interest in continuing to invest considerable sums of money in the training of apprentices. Research has shown that many employers have recently redirected their training programmes towards the few, highly skilled trades in which there is a shortage in the employment market or in which a long period of training within the undertaking is a prerequisite for competent work. There is reason to believe that if apprentice wages and allowances continue to grow more rapidly than the wages of unskilled workers and journeymen, and if other training costs also continue to increase as a result of rising skill requirements, pressure on the public authorities to take over a larger share of the training will become correspondingly stronger.

What may have to be done

One thing appears certain: most countries will have to develop a modified structure for their apprentice training systems - a structure which will allow for greater variation in the periods of training, in the level of intake and in the methods used. Many training specialists in Europe see a solution in the replacement of present apprenticeship institutions by a step-by-step plan of training. Some large undertakings are already experimenting with systems of training under which the duration and scope of continued training are determined, individually for each apprentice, after each year or term and not, as is generally the case, once only - at the end of the probation period.

The strongest pressures for change in present patterns of apprenticeship are likely to come from accelerated technical development and the current educational explosion.

Automation and other changes in manufacturing methods and processes are radically reducing the number of jobs on which young people can be given training in the traditional trades. More of the basic training will have to be given in specialised training workshops and schools. Skilled workers will have to know more, have a better understanding of trade technology. Boundaries between trades will have to be modified and the lists of apprenticeable trades will have to be shortened.

Much of the educational function of apprenticeship will be taken over by the schools. Democratisation of education is still lagging behind in most countries of Europe, compared to the patterns obtaining in the United States and Scandinavia and in some countries of Eastern Europe. But the demand for continued education up to the age of 18 is mounting.

In these circumstances the patterns of apprenticeship will have to change.

How rapidly the changes will take place, and how deeply they will affect the systems of training in Europe, are questions which cannot be answered at the present time. It is only possible to indicate briefly the organisational and technical problems which, in the interests of all the parties concerned, will have to be solved in most countries in the near future.

Without doubt both the ages and levels at which apprentices are recruited will have to be modified. Some trades may be able to continue recruiting at the end of the compulsory school period. School drop-outs and slow learners may be just what they need. But other trades will have to look for candidates among the young people who have gone on into the expanding secondary education streams. Wider opportunities for entering apprenticeship will have to be given to girls. Technical change has modified the conditions of work in many occupations to such an extent that there is no longer any reason for maintaining the traditional distinctions which have excluded girls from training for them.

General acceptance of the principle of release from work for attending courses of related instruction has been one of the major progressive changes made during the past 20 years. What still remains to be done in many of the countries, however, is to organise a better adaptation of related instruction to the requirements of each individual trade and group of trainees.

Vocational school courses were originally conceived for a relatively homogeneous groups of apprentices, all having about the same level of education and all requiring a limited amount of basic knowledge of the sciences and some further general education. Today, both courses and teaching methods are either already no longer suitable, or else will shortly prove to be ill-adapted to the needs of apprentices who have gone to school longer, have studied according to broader curricula and are older than the apprentices of the past.

The content of the courses will have to be reviewed in the light of technical change and development. The courses will also have to incorporate a measure of differentiation as regards the level and duration of training so as to take into account not only the learning capacities of the trainees but also the volume of the subjects to be learnt. In addition, trade theory must be made to keep step with the practical experience gained in the undertakings. It follows that standardised patterns prescribing the same number of hours of training for all trainees and for all trades will no longer do.

Not only what is taught but also, in many cases, who should teach it will have to be reconsidered with a view to determining the competence level which should be required of the vocational teacher and the instructor. Where the related instruction is to be given is another vital question. Small schools with one teacher, composite classes and a one-day a week programme may no longer be acceptable either economically or pedagogically. It is likely that courses will, in most instances, have to be concentrated in centrally located, well-equipped and larger schools if apprenticeship is to maintain its dominant role in vocational training.

The increased interest taken by employers, and particularly the creation of a great number of private training workshops in middle-sized and smaller undertakings and small company schools, may not always constitute a rationalisation of training which it will be possible to maintain in the future. Many of these training workshops and company schools are too small for efficient training; their programmes are often too narrowly determined by the immediate requirements of the undertaking and by the type of specialisation in production typical of the firm. A solution of this problem might be found in the expansion of group training schemes and other combined training arrangements under which trainees receive their basic training in larger school shops operated by public authorities or by a group of operating undertakings and the apprentices receive their further and formative training not in one but in several undertakings. The narrow tie between employer and apprentice may, for some trades at least, have to be replaced by an attachment of the apprentices to the trade, the local industrial association or some other body representative of a larger number of undertakings.

These developments will undoubtedly require improved co-operation between the authorities responsible for manpower policies, for apprenticeship and for general education. Part of the responsibility for practical training and basic vocational training may have to be transferred from industry or the artisan shop to the educational system. Apprenticeship may in some trades become a finishing stage in vocational training rather than a form of complete training in itself.

It may also in some respects lose its present character of a system mainly directed towards training for youth. As the need for the retraining of adults increases with accelerating technical and economic change, so the patterns of adult training will also have to change: retraining courses - now mostly given in special centres - will have to be extended in duration beyond the present average of a few months only (the range being from a few weeks to twelve months, with possibilities for an extension in exceptional cases), and may in many cases more appropriately be organised and supervised in much the same way that apprenticeship is organised today. The extention of apprenticeship and other training for highly skilled and skilled trades to adults is becoming a necessity in the present situation of rapid economic change. Improved communications will force many small retailers out of business; many farmers and rural workers will have to change to other work as small-scale farming becomes increasingly uneconomic. Many of the people forced out of business in this manner will still be young enough to learn a complete trade and will be fully capable of doing highly skilled work. Present organisation of training, however - in practice, if not in principle - offers them no possibility for acquiring recognised qualifications for more than semi-skilled work.

It may also prove desirable to introduce new financial incentives or to expand existing facilities for apprentices to acquire training in shortage trades outside their home areas. Apprentices must in this respect have the same advantages as the students in the higher schools.

The roles of the four partners to the training process - the public authorities, the employers, the unions and the educationalists - will have to be redefined. Greater financial incentive may have to be introduced to assist employers in meeting increasing training costs and to ensure high quality standards.

These are some of the problems which can already be discerned and which are likely to be accentuated in the next few years. Technical development would seem essentially to require not less but more of that judicious blend of pedagogically well-designed basic training at school or in a training workshop, carefully planned related instruction and systematic and controlled work experience which only a well-balanced apprenticeship programme can provide.

NOTES AND REFERENCES

General

Throughout this study the Federal Republic of Germany has usually been referred to as "Germany". The information given in the report refers only to the area of the Federal Republic of Germany and, where indicated, West Berlin.

Every effort has been made to respect the division of administrative and legislative responsibility for education and training in the United Kingdom and, wherever possible, tables and text refer, as appropriate, to England and Wales, Scotland, Northern Ireland, Great Britain or the United Kingdom.

The statistical data contained in this report have, as a rule, been drawn from the official apprenticeship and education statistics of the different countries. The references to these publications have been listed in the bibliography.

Preface

1. The project forms part of the comprehensive research programme undertaken by the United States Department of Labor on problems of manpower development, training and employment in a labour market characterised by rapid technical change. For a detailed description of this programme see Manpower research and training, a report by the Secretary of Labor, U.S. Department of Labor, Washington, D.C., March 1965.

   The project also forms part of a long-term programme of research which was undertaken by the International Vocational Training Information and Research Centre (CIRF) of the International Labour Office, in co-operation with the Automation Unit of the ILO. The programme includes, in particular, studies on the changing nature of skilled work and the consequent adjustments made necessary in training programmes and systems. Reports on similar studies, e.g. on the changing structure of employment in the iron and steel industry (carried out at the request of the European Coal and Steel Community) and on training for skilled work in the metal trades (undertaken on behalf of the Organisation for Economic Co-operation and Development), have been published in the CIRF quarterly Training for Progress.

2. These eight countries were chosen because, together, they constitute the area in which most of the development of apprenticeship in Europe is taking place. Only Eastern Europe and Luxembourg should be added to give a complete picture of the major variations in the development of modern apprenticeship. This statement should be qualified by a reference to the facts that apprenticeship has been reintroduced or reinforced in several other European countries, such as Italy, Norway, Portugal and Sweden, and that much of the development taking place in Eastern European countries under the name of "polytechnical education" has derived its inspiration mainly from the same sources as modern apprenticeship.

   This study deals principally with apprenticeship in industrial, commercial and artisan trades. Apprentice training in agriculture, which plays an insignificant role in most national apprenticeship systems, has been less systematically treated.

Chapter I

1. New apprenticeship Acts were introduced in Denmark (1921), France (1919), the Netherlands (1919). Austria and Czechoslovakia may for historic reasons be disregarded in this context. The Weimar Constitution in Germany (1919) provided for a day-time continuation school with compulsory related instruction at vocational schools for all young people below the age of 18 not following full-time courses in schools.

2. The most frequently quoted examples in the development of vocational schools as an alternative to training in employment are France and the Netherlands. These two countries have adopted patterns which have been introduced in many other countries of Europe e. g. Italy, Sweden, Turkey and, particularly, the USSR. It is often forgotten that Germany, which today is considered perhaps the most outstanding example of an unbroken apprenticeship tradition, also had a rapid expansion of training in centres and schools during the period beginning with the political change in 1933. During this period, the establishment of schools was considered the most efficient means of creating the cadres required for redeveloping the depressed German industry and for usefully employing some of the out-of-work youth.

   An anecdote may be used to illustrate the critical situation of training in apprenticeship during the 1930's. In 1935, the Danish authorities, shaken by a decreasing volume in training, ceased to publish statistics on apprenticeship. The extent of the decline which had taken place during the 1930's became evident when figures were once again published in 1941. This led to a lively political discussion about the adequacy of the existing legal provisions for training; it was finally concluded by the adoption of a new law in 1956.

3. The two major points made in this paragraph have been illustrated in another research project undertaken by CIRF at the request of the U. S. Department of Labor: Training of maintenance workers (Genève, 1965, mimeographed). Four French undertakings in the chemical industries had found it necessary to establish their own schools in the years 1950-1952 to meet the shortage of skilled maintenance workers. A few years later the need for substantial increases in the number of skilled maintenance workers in the undertakings had been met and the schools were turned over to public authorities or closed. The study also gave evidence of the practice in many undertakings of postponing training in highly

qualified specialisations until after the period of apprenticeship. In the chemical industries, this practice stems from the fact that social legislation often prohibits employment of adolescents on shift work, a fact which limits the possibilities for their training in production.

4. The discussion often becomes confused because there are two lines of criticism: one taking educational motivations as a point of departure and the other based on manpower considerations. This was particularly evident in a recent discussion in Germany provoked by a series of articles which appeared in late 1963 and early 1964 in the popular weekly, Stern and were highly critical of present practices in vocational guidance and apprentice training. Stern had actually taken as its model a similar criticism of American vocational training practices which had appeared in the first half of 1963 in McCall's Magazine. Stern repeated its attack, based mainly on manpower considerations, in late 1964: Lutz, Bauer and Von Kornatzki, Berufsaussichten und Berufsausbildung in der Bundesrepublik.

5. The number of middle-school and secondary school graduates concluding an indenture seems to be highest in Germany: around 10 per cent of all apprentices. Most of these accept training in apprenticeship mainly in order to qualify for entry into technical institutes and other schools of secondary or higher technical and commercial education which require full craftsman training from their students.

   A special situation is developing in Denmark where voluntary continuation classes, added to the common basic school, are taking on a rapidly increasing proportion of the adolescents, aged 14-17, not admitted to the secondary schools. This proportion increased from 10.4 per cent in 1957 to 24.5 per cent in 1962. At the same time the number of school leavers having passed the middle-school examination (age 16) increased from 12.3 per cent to 22.5 per cent of all school leavers, and the number of youngsters leaving school at the age of 14 fell from 39.2 to 29.2 per cent of all adolescents.

6. In translation into English, the relevant text of the Danish apprenticeship Act (No. 261 of 2 October 1956) reads as follows: "Anyone who engages a person under 18 years of age for work in an undertaking in which work that is approved as a trade under this Act, or forms part of such trade, is performed shall, unless the person concerned has already served an apprenticeship in the trade,

ensure that before he enters employment a written contract of apprenticeship is concluded specifying the trade in which the apprentice is to receive training". (ILO, Legislative Series, 1956 - Den. 2, Ch. I, para. 1, sub-para. (1)).

7. In the larger industries, which employ a substantial proportion of all youngsters undergoing training in apprenticeship (e.g. the construction and engineering industries), the minimum age is 16.

8. A complete school system for training skilled personnel had already been established on a voluntary basis by the Paris Chamber of Commerce and Industry. This system largely served as a pattern for the expansion of the vocational school system in France.

9. At the age of 14, about 36 per cent of all Dutch boys go to an LTS, 10 per cent to continuation classes in the primary schools, 26 per cent to middle-schools and 20 per cent to general secondary education schools; 12 per cent leave school. The number of girls in the LTS corresponds to about 30 per cent of the age group: 28 per cent leave school or go into the primary school continuation classes, leaving 41 per cent for the middle-school and the general secondary education streams. (These figures relate to the 1961-62 school year.)

10. For an English translation of the apprentice Act of 1958, see ILO, Legislative Series, 1958 - Cz. 3.

11. The information concerning the structure of the school systems in these countries is necessarily schematic. The high degree of decentralisation in the United Kingdom, the delegation of authority over educational policy to states in Austria and Germany and to cantons in Switzerland, the existence of an often extensive (particularly in the Netherlands) private school system and many other factors make the picture rather more complicated. A more detailed description is to be found in: UNESCO, World survey of education, Volumes II (primary education) and III (secondary education). A fourth volume, covering technical education, was published in 1966.

12. These figures are given with some reservations. School statistics are not easily comparable internationally; institutions differ

between countries and definitions of levels of education are seldom the same.

13. Ständige Konferenz der Kultusminister der Länder der Bundesrepublik Deutschland, Schulbesuch 1961 bis 1970 - Erster Bericht der Arbeitsgruppe für Fragen der Bedarfsfeststellung.

14. In absolute figures, the apprenticeship numbers developed as follows in Germany between 1950 and 1963. The figures for 1962 and 1963 include apprentices in West Berlin.

Year	Number of apprentices (in thousands)
1950	971
. . .	. . .
1954	1,329
1955	1,424
1956	1,458
1957	1,406
1958	1,371
1959	1,305
1960	1,224
1961	1,197
1962	1,225
1963	1,274

See also the discussion on p.27 of this report.

Austrian apprentices numbered about 93,000 trainees in 1950, reached a peak of 159,000 in 1957, dropped to a low of 141,000 in 1960 and later grew to 153,000 in 1963.

15. See table on p.205.

16. In Denmark the number of new apprenticeship contracts increased from 23,000 in 1957 to 34,000 in 1962; there was a slight drop to 33,000 in 1963. In the Netherlands the figure of 26,000 had been reached in 1952. By 1959, the number of apprentices was 50,000 and had reached 69,000 in 1963. In Switzerland the increase from 1958 (95,000) was steady throughout the following years and the number of apprentices stood at 131,000 in 1963.

UNITED KINGDOM

Size of age groups, numbers entering employment (age 15-17) and number of apprentices, 1959, 1961 and 1963

Year and age group	Size of age groups		Number entering employment upon leaving school		Number of apprentices		5 and 6 as a percentage of 3 and 4	
	1	2	3	4	5	6	7	8
	M	F	M	F	M	F	M	F
1959								
15	392,800	375,900	243,000	231,050	77,338	17,288	32	8
16	373,400	358,500	46,498	41,463	18,495	2,427	40	6
17	341,500	329,400	13,316	14,565	3,924	1,058	30	7
1961								
15	392,400	375,500	244,798	233,879	89,514	17,232	37	7
16	389,500	371,200	50,215	43,162	21,731	2,425	43	6
17	394,800	378,400	16,037	16,730	4,813	1,077	30	6
1963								
15	456,700	440,500	219,169	205,611	68,740	12,237	32	6
16	511,200	488,300	72,488	62,855	29,828	2,582	41	4
17	394,500	376,000	20,450	20,578	5,357	810	26	4

Number of above age groups receiving training in employment other than apprenticeship and aggregate figures relating to all trainees in employment

Year and age group	Other employment with training		Total receiving training in employment		11 and 12 as a percentage of 3 and 4	
	9	10	11	12	13	14
	M	F	M	F	M	F
1959	Figures not available					
1961						
15	39,560	28,719	129,074	45,951	53	20
16	4,890	2,832	26,621	5,257	53	13
17	1,622	1,194	6,435	2,271	40	13
1963						
15	32,495	26,777	101,235	39,014	47	19
16	8,190	3,920	38,018	6,502	52	10
17	2,303	1,527	7,660	2,337	37	11

Figures supplied by Ministry of Labour, Youth Employment Service.

Figures for Czechoslovakia have not been given since the recent radical reorganisation of the apprenticeship system makes it impossible to obtain a satisfactory basis for comparison.

17. The rapidity of this development may be illustrated by the following data relating to the position at the end of 1957 and 1960 respectively. They were compiled from Austrian school statistics published in 1958 and 1961 respectively.

Austria: Employment and occupations of young people aged 15-16

Young people at the age level 15-16 in	Key-date 31.12.57 per cent	Key-date 31.12.60 per cent
part-time vocational schools (apprenticeship)	33.0	40.0
not in school (mostly in unskilled employment)	40.0	30.5
general secondary school	9.5	11.5
full-time vocational schools (including primary school teacher training institutes)	17.5	18.0

18. The changing pattern in the employment of women has been described in some detail in an ILO report on the subject: Vocational guidance and training of girls and women.

19. A training officer in France illustrated this point by recounting his difficulties five years ago when German colleagues had asked him to place, for a period of practical experience in undertakings, five girls, graduate journeymen in industrial drawing. Only five years later the very firms which at that time had not considered it possible to accept girls in their drawing offices were now taking on girl apprentices in this field.

20. According to unsubstantiated information obtained in Germany, only some 28,000 out of 398,000 apprentices (7 per cent) were indentured outside their home area. About 6,000 lived in board-

ing houses which were financed out of public funds.

21. The following figures, based on Austrian vocational guidance statistics, show the parallel development of entry into apprenticeship and entry into full-time courses at vocational schools during the period 1958-1963.

Year	Entry into apprenticeship	Entry into full-time vocational school
1958	49, 400	22, 300
1959	46, 300	20, 300
1960	42, 200	18, 200
1961	50, 700	20, 300
1962	48, 700	20, 700
1963	47, 900	17, 700

Chapter II

1. For instance, the French list comprises 190 artisan trades; Germany recognises 124 artisan trades.

2. Limits set for pedagogical purposes (maximum number of apprentices per journeyman) may be disregarded in this connection. There are a few cases where minimum numbers of apprentices introduced during the pre-war period are still included in the regulations.

3. The trend in some commercial trades has been different, however, in both Germany and Denmark. Several new specialisations have been provided for. These do not essentially constitute a splitting up of trades but rather regulation of training in fields which were previously loosely defined.

4. The absolute figures for industrial apprentices in the Federal Republic of Germany (excluding West Berlin) for 1954 and 1962 are given in the following table.

Training period	1954		1962	
	Number of indentures	percentage	Number of indentures	percentage
3 1/2 years	103,000	40	130,700	52
3 "	128,000	50	108,200	43
2 "	13,000	5	6,300	2
1 - 1 1/2 "	13,000	5	7,900	3
	257,000	100	253,100	100

5. A distinction is made in the United Kingdom between craft, student and graduate apprenticeships. The craft apprenticeship is the type of training arrangement normally referred to in this report. Student apprenticeship is shorter and normally requires the apprentice to have completed secondary education before starting training. The aim is usually training to technician level. Graduate apprenticeship is arranged for science graduates and others who have taken a university degree. Similar arrangements are to be found in Germany, where candidates for teacher training institutions and students at institutes of technology may be required to go through a shortened period of "guided practice".

6. These figures have been compiled from French education statistics. They have not been adjusted to allow for the addition of the young people who, for a variety of reasons, do not attend the courses of compulsory related instruction.

7. In the same year some 164,500 boys were taking full-time training at public vocational schools (collège d'enseignement technique - CET). Of the 215 trades taught only 24 had more than 1,000 trainees; 12 trades shared among them 70 per cent of the total enrolment. As in the artisan training, some of the trades were practically deserted: 90 (42 per cent) had fewer than 50 trainees; 22 (10 per cent) had no more than 10.

8. Trades have been grouped arbitrarily wherever distinctions between trade specialisations are very minor.

Chapter III

1. **ARBEITSSTELLE FÜR BETRIEBLICHE BERUFSAUSBILDUNG: Berufsbild, Berufsbildungsplan, Prüfungsanforderungen - Elektromechaniker, Bielefeld, W. Bertelsmann Verlag K.G., undated.**

2. **CIRF, Trained as a skilled worker. A more comprehensive report on this project is being published by the Organisation for Economic Co-operation and Development (OECD).**

3. **Syllabus issued by Stichting Opleidingsfonds BEMETEL (Van Stolkweg 34, 's-Gravenhage).**

4. **KLÖCKER-LARSEN, Fleming, Laerlingeuddannelsen i Danmark, p. 100-101.**

5. **KRAUSE, Erwin, Grundlagen einer Industriepädagogik, p. 85-94.**

6. **CIRF, Trained as a skilled worker, op. cit.**

7. **Technical journals have recently abounded with proposals for various types of step-by-step training systems. Considerable publicity has been given recently to a training plan introduced by the Krupp works which divides the period of training into three successive stages, each terminated by an examination which determines whether the trainee may continue his training. Similar ideas have been put forward by the director of the German Central Office for Industrial Training (Arbeitsstelle für betriebliche Berufsausbildung, ABB) and by the German trade unions (DGB).**

8. **CIRF, Training of vocational teachers, a study describing current practices in training vocational teachers in 12 European countries.**

Chapter IV

1. WÜNSCH, Zwischenprüfung als Mittel zur Verbesserung der betrieblichen Ausbildung.

2. DITLMANN, Klaus, Olympic games of the trades; FREDE, Ludger, European foundry workers compare their skills; CIRF, Testing commercial skill: paper work, fairs and real business.

3. An example in English of a points system used in the Netherlands in the assessment of results is found in BEMETEL: Practical exercises: benchfitting, 's-Gravenhage, February 1965.

4. BUNDESKAMMER DER GEWERBLICHEN WIRTSCHAFT, Lehrlingsstatistik, (Stichtag 31.12.1962), p. XIX.

5. ASSEMBLEE DES PRESIDENTS DES CHAMBRES DE METIERS DE FRANCE, Etude sur la fonction des Chambres de métiers concernant l'organisation de la formation professionnelle, p. 2-15.

6. VOJTA, Josef, Lehrwerkstätte - ja oder nein? p. 225 ff.

7. This study was undertaken at the request of CIRF within the framework of the present survey. The results have not previously been published.

8. In 1962, of 59,000 persons sitting for the CAP examinations on terminating full-time courses at a public vocational school (collège d'enseignement technique - CET), 41,000 (approximately 70 per cent) passed the tests. Of 46,000 trainees who received their training in part-time courses combined with in-plant training, only 45 per cent (some 21,000 trainees) passed the CAP examination. At the same examinations, the pass rate for trainees (mainly apprentices) who had received their training in company schools was approximately 73 per cent. It should be noted, however, that the schools are in a position to apply rather severe trainee selection criteria, which inevitably has a beneficial effect on the results achieved by their trainees.

Chapter V

1. A selected list of apprenticeship legislation in force in each of the eight countries is to be found below, p. 213-221.

2. The trade regulations for the artisan trades in Austria and Germany are exceptions to this rule as they contain a list of trades covered by the Acts.

Chapter VI

1. The information given in this chapter is a summary of data collected for a research project on the organisation and financing of training in 12 countries, members of the Organisation for Economic Co-operation and Development (OECD), which was carried out by CIRF in 1964/65. The report, which contains more detailed references to the various financial provisions, is to be published by OECD.

2. NIENS, Das Kostenproblem in der betrieblichen Berufsausbildung, p. 658 ff.

3. WERNET, Über die Lehrlingshaltung im Handwerk in wirtschaftlicher Sicht, Beiträge zur Handwerksforschung, Vol. 2, p. 85.

   WARTH, Lehrlingsausbildung und Ausbildungskosten (Handwerk, Industrie), Probleme einer wirtschaftlichen Beurteilung der Lehrlingsausbildung und die Frage der Ausbildungskosten, Forschungsberichte aus dem Handwerk, Vol. 8.

4. The great variations may be illustrated by the following examples. In the United Kingdom engineering apprentices aged 16 are paid wages which start at 27.5 per cent of a fitter's minimum rate, increasing to 62.5 per cent at the age of 20. In the building industry in England and Wales, 15-year-old apprentices start at 25 per cent of a craftsman's standard minimum rate and receive gradual increases up to 87.5 per cent at the age of 20. In furniture manufacturing, the starting rate at age 16 is 38 per cent of a journeyman's wage, and the final rate 90 per cent.

Chapter VII

1. A discussion of the attitudes of industrialists is found in Union des Industries métallurgiques et minières, L'Enseignement - étude critique et propositions de réforme.

2. LEMPERT, Wolfgang and EBEL, Heinrich, Lehrzeitdauer, Ausbildungssystem und Ausbildungserfolg.

LEGISLATIVE TEXTS CONCERNING APPRENTICESHIP AND VOCATIONAL TRAINING

The texts included, country by country, in this Annex do not constitute a comprehensive survey of all legislation affecting apprenticeship and vocational training in each of the countries concerned. They have been selected with a view to providing a short list for ready reference, and an over-all view of the nature of the principal national regulations governing in-plant training under an indenture.

To obtain a more complete picture of the situation there should be added, as appropriate, the relevant state or regional legislation, the numerous collective agreements which regulate conditions of apprenticeship (minimum age, duration and content of training, terms of indenture, remuneration, etc.) for specific industries, as well as the extensive body of social and labour legislation which, in each of the countries, directly affects apprentices and young workers (e.g. provisions concerning compulsory education, vocational guidance, conditions of work, employment forbidden to young persons, and other youth protection measures).

Inclusion of references to such texts, and to the equally important Orders, regulations, circulars, etc. which, at national, state or local level interpret and apply national legislation, would so extend the list as to destroy its prime objective : a simplified listing for easy and rapid consultation.

AUSTRIA

Gewerbeordnung, 1859 (Trade regulations). Numerous amendments, the latest being in 1952.

> Provisions concerning, inter alia, the right to employ apprentices in the artisan trades; conditions for admission to apprenticeship, duration of training, probationary period, content of indenture, mutual obligations of employers and apprentices, termination of contract, examinations.

Erlass des Reichswirtschaftsminister, 2 Dez. 1938, zum Aufbau des industriellen und kaufmännischen Ausbildungs- und Prüfungswesens (Ordinance of 2 Dec. 1938 of the Minister of Economic Affairs concerning industrial and commercial training and examinations). Z1. III SW 18. 585.

> Regulations governing the training of apprentices for industry and commerce; examinations.

Handelskammergesetz, 1946 (Act concerning the Chambers of Trade and Commerce) Bundesgesetzblatt für die Republik Österreich (BGBl.) No. 182/1946.

> Provisions establishing, with respect to training for industry, commerce, the artisan trades, transport and the hotel industry and related occupations, the powers and responsibilities of the trade chambers in their respective fields.

Arbeiterkammergesetz, 1954 (Act concerning the Chambers of Labour) BGBl. No. 105/1954.

> Provisions concerning the consultative status of the Chambers of Labour as regards duration of apprenticeship, ratio of apprentices to journeymen, and establishment of training regulations.
>
> For an English translation, see ILO, Legislative Series, 1956 - Aus. 2.

Schulpflichtgesetz, 1962 (Compulsory Education Act) BGBl. No. 241/1962.

> Provisions concerning related instruction for apprentices.

Landarbeitsgesetz-Novelle 1965 (New agricultural labour Act) BGBl. No. 65/1965.

> Modifies ch. 7 (apprentices) of 1948 agricultural labour Act: definition of apprenticeship, right to train apprentices, terms of indenture, duration of training, related instruction.

CZECHOSLOVAKIA

Učňovský zákon, 12 Dec. 1958 (Act respecting the education of young persons for an occupation under an apprenticeship (Apprenticeship Act) dated 12 Dec. 1958). (Sbírka Zákonů Republiky Československé, 30 Dec. 1958, No. 37, Text 89.)

Provisions (for all trades and occupations) concerning contract of apprenticeship (mutual obligations of apprentices and employers, transfer of contract, termination of contract); related instruction and final examinations; financing of training; respective competence of authorities and bodies concerned with training.

For an English translation, see ILO, Legislative Series, 1958 - Cz. 3.

Vyhláška MŠK č. 81/1959 Ú.I. (Ordinance No. 81 of 1959 of the Ministry of Education).

Provisions regulating final examinations for apprentices.

Vyhláška MŠK č. 73/1961 Sb., doplněná vyhláškami č. 57/1962 Sb., č. 83/1962 Sb. a č. 35/1963 Sb. (Ordinances Nos. 73 of 1961, 57 and 83 of 1962 and 35 of 1963 of the Ministry of Education).

List of apprenticeable trades for all economic activities.

Vyhláška MŠK č. 130/1958 Ú.I. (Ordinance No. 130 of 1958 of the Ministry of Education).

Provisions concerning apprentice wages and allowances.

DENMARK

Lov om laerlingsforhold, Nr. 261, 2.10.1956 (Apprenticeship Act, No. 261, dated 2 Oct. 1956) Lovtidende A, No. XXVIII, 9 Oct. 1956.

Provisions concerning apprenticeship in all trades and occupations: indenture, minimum age for admission, duration of training, related instruction, mutual obligations of apprentices and employer; conditions of employment of apprentices (wages, holidays); administrative machinery for supervision and control of apprenticeship (respective responsibilities of commissions, inspectorates and trade committees); sanctions applicable for non-observance of regulations.

For an English translation, see ILO, Legislative Series, 1956 - Den. 2.

Lov om beskaeftigelse og uddanelse af unge, Nr. 195, 18. 5. 1960 (Act concerning the employment and training of young persons, No. 195, dated 18 May 1960) Lovtidende A, No. XVI, 1 June 1960.

> Provisions respecting measures to encourage the training of, and the prevention of unemployment amongst young people. Repeals Act No. 128 of 29 Mar. 1947.

Statsministeriets bekendtgørelse om overførelse af visse forretningsområder til undervisningsministeriet, Nr. 296, 23. 9. 1961 (Notification No. 296 concerning the transfer of certain responsibilities to the Ministry of Education) Lovtidende A, No. XXII, 19 Oct. 1961.

> Transfers, with effect from 1 Oct. 1961, responsibility for apprentice training (including grants and allowances payable to apprentices) from the Ministries of Labour and Commerce to the Ministry of Education.

FRANCE

Loi no. 14589 du 25 juillet 1919 relative à l'organisation de l'enseignement technique, industriel et commercial (Loi "Astier") (Act No. 14589 of 25 July 1919 concerning the organisation of technical, industrial and commercial education). Bulletin des Lois de la Republique française, No. 254, 20 Sept. 1919.

> Provisions concerning the place and organisation of technical and vocational training, for industrial and commercial trades and occupations, within the educational system; establishment and powers of committees on technical and vocational education; related instruction; examinations and certificates; (cf. Technical Education Code).
>
> For an English translation, see ILO, Legislative Series, 1922 - Fr. 5.

Loi de finances du 13 juillet 1925 complétée par la loi de finances no. 53-79 du 7 fév. 1953 et la loi no. 53-1312 du 31 déc. 1953. (Finance Act of 13 July 1925 supplemented by Finance Act No. 53-79 of 7 Feb. 1953 and Act No. 53-1312 of 31 Dec. 1953). Journal officiel de la République française (J.O.), 14 July 1925, 8 Feb. 1953 and 1 Jan. 1954.

> Institution of apprenticeship levy for financing apprentice training in industry, commerce, agricultural co-operatives and the artisan trades; not applicable to small artisan shops employing apprentices; may be applied to agricultural training.

Loi du 20 mars 1928 relative à l'organisation de l'apprentissage (Act of 20 March 1928 concerning the organisation of apprenticeship) (J.O.), 22 March 1928.

> **Provisions concerning the nature and form of the apprenticeship contract; the relationship between apprentice and employer in industry, commerce and the artisan trades; regulation of examinations; supervision and control of training; sanctions; (cf. Labour Code).**
>
> **For an English translation of relevant passages, see ILO, Legislative Series, 1928 - Fr. 7.**

Loi du 10 mars 1937 portant organisation de l'apprentissage dans les entreprises artisanales (Loi "Walter Paulin") (Act of 10 March 1937 respecting the organisation of apprenticeship in artisan undertakings). J.O., 12 March 1937.

> **Provisions concerning the organisation of apprenticeship in the artisan trades; establishment of training regulations; indentures, conditions for employment of apprentices, related instruction, inspection, vocational guidance, placement in employment, examinations and certificates, financing and grants; (cf. Artisan Trades Code).**
>
> **For an English translation, see ILO, Legislative Series, 1937 - Fr. 4.**

Décret no. 55-1265 du 27 sept. 1955 portant revision du Code rural (Decree No. 55-1265 of 27 Sept. 1955 to revise the Rural Code) J.O., 28 Sept. 1955.

> **Provisions concerning apprenticeship contract, related instruction, examinations and certificates, inspection of apprentices; (cf. Rural Code).**

Loi no. 60-791 du 2 août 1960 relative à l'enseignement et à la formation professionnelle agricole (Act No. 60-791 of 2 Aug. 1960 respecting technical and vocational training in agriculture). J.O., 4 Aug. 1960.

> **Provisions concerning the organisation and administration of all levels of vocational training in agriculture.**
>
> **For an English translation, see ILO, Legislative Series, 1960 - Fr. 2.**

Décret no. 61-632 du 20 juin 1961 portant application de la loi du 2 août 1960 sur l'enseignement et la formation professionnelle agricoles (Decree No. 61-632 of 20 June 1961, to administer the Act of 2 Aug. 1960 respecting technical and vocational training in agriculture) J.O., 21 June 1961.

Provisions concerning the organisation of technical and vocational training in agriculture; association of agricultural vocational training with general education; related instruction, teacher training, agricultural training for girls, examinations and certificates.

For an English translation, see ILO, Legislative Series, 1961 - Fr. 2.

In France the principal legal texts concerning labour questions, technical education, the artisan trades, and agriculture have been assembled and codified in the following volumes:

Code du travail (textes codifiés et textes annexes) (Labour Code). Paris, Jurisprudence générale Dalloz, 2 vols.

Code de l'enseignement technique. Décret no. 56-931 du 14 sept. 1956 portant codification des textes législatifs concernant l'enseignement technique (Technical Education Code. Decree No. 56-931 of 14 Sept. 1956 to codify the legal texts concerning technical education). J.O., 19 Sept. 1956.

Code de l'artisanat (Artisan Trades Code). Paris, published by: Journal officiel de la République française.

Code rural (Rural Code). Paris, published by: Journal officiel de la République française.

The Codes are subject to continual revision.

The above list of basic French legislation indicates, where appropriate, whether the individual text is to be found in one or other of the four codes in question.

FEDERAL REPUBLIC OF GERMANY

Gewerbeordnung, 1869 (Trade Regulations), as amended.

Provisions concerning, inter alia, the right to employ and train apprentices, mutual obligations of the employer and apprentice, content of indenture, probationary period, transfer of contract, allowances, final examinations, sanctions; applicable to industrial employers only.

Handelsgesetzbuch, 1897 (Commercial Code), as amended.

Provisions, with respect to commercial undertakings, concerning the responsibilities of the undertaking as regards apprentices, period of indenture, change of occupation, probationary period, allowances, certificates, persons not allowed to train young people, sanctions.

Handwerksordnung vom 28 December 1965 (Handicrafts Regulation Act of 28 December 1965). Bundesgesetzblatt (BGBl.), Part 1, No. 1, 7 January 1966.

Provisions, with respect to the artisan trades, concerning the right to employ and instruct apprentices, mutual obligations of mastercraftsman and apprentice, content of indenture, duration of training, probationary period, registration and transfer of contracts, related instruction and final examinations, competence of the Chambers of artisan trades, list of apprenticeable trades, sanctions.

For an English translation, see ILO, Legislative Series 1953 - Ger. F.R. 3.

Gesetz zur vorläufigen Regelung der Rechtsverhältnisse der Industrie- und Handelskammern, 18. Dez. 1956 (Act of 18 Dec. 1956 to regulate the legal status of the Chambers of Industry and Commerce). BGBl., Part I, No. 52, 21 Dec. 1956.

Provisions, inter alia, concerning the autonomy of the Chambers of industry and commerce in the administration of apprenticeship.

Essential provisions concerning education and training are to be found in state (Land) legislation and in the Federal Youth Protection Act.

NETHERLANDS

Nijverheidsonderwijswet, 14.10. 1919 (Vocational education Act of 14 Oct. 1919).

Provisions concerning vocational training in industrial and artisan trades, navigation, home management and traditionally female occupations, provided at junior technicl schools; establishment and competence of industrial foundations (stichtingen); conditions governing apprenticeship in industry; related instruction; competence of the Ministry of Education.

Wet op het voortgezet onderwijs - Mammoetwet, 14.2.1963 (Further education Act of 14 Feb. 1963). Staatsblad, No. 40, 26 Feb. 1963.

Provisions concerning the reorganisation of all post-primary education, including training in vocational schools, up to (but excluding) university.

Wet van 12 mei 1966 tot regeling van get leerlingwezen (Wet op het leerlingwezen) (Act of 12 May 1966 to regulate apprenticeship - Apprenticeship Act). Staatsblad, No. 251, 1966.

Provisions concerning apprenticeship in all branches of economic activity; administrative machinery; organisation of practical training, general and related instruction; terms of indenture; duration of training and probationary period; final examination. Date for coming into effect still to be determined.

SWITZERLAND

Loi fédérale du 20 sept. 1963 sur la formation professionnelle (Federal Act of 20 Sept. 1963 concerning vocational training). Feuille fédérale, Vol. II, No. 40, 10 Oct. 1963.

Provisions concerning vocational guidance and training in all trades and occupations except those in: agriculture, silviculture, fishing, science, fine arts and education, medical services; specifies contractual relationship between employer and apprentice, organisation of training (duration of training, related instruction, examinations); further training; federal grants for training purposes.

Ordonnance d'exécution du 30 mars 1965 de la loi fédérale sur la formation professionnelle, (Federal Ordinance of 30 March 1965 respecting the implementation of the Federal Act on vocational training, 1963). Recueil des lois fédérales (RLF), No. 16, 15 April 1965.

Amplification of the provisions of the Act of 20 Sept. 1963; in particular with respect to vocational guidance, examination procedures, federal grants.

Loi fédérale du 3 octobre 1951 sur l'amélioration de l'agriculture et le maintien de la population paysanne (loi sur l'agriculture). Titre I: formation professionnelle et recherche agricoles (Federal Act of 3 Oct. 1951 for the improvement of agriculture and the maintenance of the peasant population (Agriculture Act). Part I: occupational training and agricultural research (Arts. 5 to 17). RLF, 31 Dec. 1953.

Provisions concerning all aspects of training for agriculture; conditions governing apprenticeship, related instruction and examinations.

Ordonnance du 29 mars 1955 sur la formation professionnelle et la recherche agricoles (Federal Ordinance of 29 March 1955 respecting vocational training and research in agriculture). RLF, 31 March 1955.

> **Amplification of the provisions of the Agriculture Act, 1951; in particular, conditions and regulations governing apprenticeship - administration, apprenticeship indenture, duration of training, related instruction, examinations.**
>
> **For an English translation, see ILO, Legislative Series, 1955 - Swi. 1.**

Essential provisions in application of federal legislation may also be promulgated in cantonal laws and regulations.

UNITED KINGDOM

In the United Kingdom there is no national legislation governing the terms and conditions of in-plant training under an indenture. Apprenticeship is regulated instead by national collective agreements concluded with respect to specific industries and occupations and covering such aspects as duration and content of apprenticeship, minimum age for admission, apprentice wages, etc.

Related instruction is assimilated to further education, for which provision is made in the education Acts applicable to England and Wales (1944), Scotland (1946) and Northern Ireland (1947) respectively. Most collective agreements include clauses concerning day release for apprentices for attending classes of related instruction.

For extracts of relevant passages of the Education Act, 1944, see ILO, Legislative Series, 1944 - G. B. 5.

The industrial training Acts of 1964 (applicable to Great Britain and Northern Ireland respectively) constitute a departure from previous practice. They provide for new administrative machinery (industrial training boards) for the national regulation of training at all levels (including apprenticeship) and for all sectors of economic activity; for the imposition, industry by industry, of levies for financing training; for action to establish national training standards and to encourage the development of training.

cf. Industrial training Act, 1964. London, HMSO, 1964, 15p.

THE ILO VOCATIONAL TRAINING RECOMMENDATION, 1962

In June 1962 the General Conference of the International Labour Organisation adopted a comprehensive Recommendation on vocational training to supersede three earlier texts, two of which - on vocational training in general and on apprenticeship respectively - had been adopted in 1939, while the third, dealing with the vocational training of adults, had been adopted in 1950. Six months later the General Conference of the United Nations Educational, Scientific and Cultural Organisation adopted a new Recommendation concerning technical and vocational education.

The parallel work undertaken by these two organisations, the close co-operation maintained between them throughout the different stages of the preparatory work, and the adoption of the texts within the span of a bare six months, serve to underline the fact that the two Recommendations are dealing with one subject from different but complementary standpoints.

The text below reproduces only section X of the ILO Recommendation, which deals specifically with apprenticeship.

X. APPRENTICESHIP

46. Systematic long-term training for a recognized occupation taking place substantially within an undertaking or under an independent craftsman should be governed by a written contract of apprenticeship and be subject to established standards.

47. In deciding whether a particular occupation should be recognized as apprenticeable, account should be taken of such matters as:
(a) the degree of skill and theoretical technical knowledge required for the occupation in question;
(b) the period of training necessary for the acquisition of the required skill and knowledge;
(c) the suitability of apprenticeship training for imparting the required skill and knowledge;
(d) the current and anticipated employment situation within the occupation in question.

48. (1) The contract of apprenticeship should be entered into either with an individual employer, a group of employers, or a body such as an apprenticeship committee or service specially entrusted with the control of apprenticeship, as may be most appropriate to the national circumstances.

(2) Where the apprentice is a minor, a parent, guardian or legal representative should be included in the contract as a party.

(3) The parties responsible for providing the apprenticeship should either themselves be properly qualified to give the training or be in a position to arrange for the training to be given by a person or persons so qualified, and the facilities available for training the apprentice should be such as will enable him to secure complete training for the occupation being taught.

(4) The competent authority should remain in regular contact with the undertaking or person providing the training, and should ensure, by means of regular inspection or supervision, that the objectives of the apprenticeship are being achieved.

49. The contract should:
(a) contain an express or implied obligation to train in a particular occupation in return for an obligation of the same nature to serve as an apprentice during the period of apprenticeship;
(b) incorporate such of the standards and regulations established for the occupation in question as may be necessary or desirable in the interests of the parties;
(c) provide for such other mutual rights and obligations as may be relevant and not otherwise covered, including especially the observance of all safety regulations;
(d) provide for the settlement of disputes between the parties.

50. According to the circumstances in the country concerned, an occupation may be recognized as apprenticeable, and the standards referred to in Paragraph 46 and any regulations concerning apprenticeship may be established by:

(a) statutory enactments;
(b) decisions of bodies specially entrusted with the control of apprenticeship;
(c) collective agreements; or
(d) a combination of these various methods.

51. Particular account should be taken of the following matters in the standards and regulations governing apprenticeship in respect of each recognized apprenticeable occupation:

(a) the educational qualifications and minimum age governing entry into apprenticeship;
(b) provision for special cases of workers whose age exceeds the specified maximum age;
(c) the duration of apprenticeship including the period of probation, having regard to the degree of skill and theoretical technical knowledge required;
(d) measures for determining the extent to which the normal duration of the apprenticeship might be reduced in the light of any prior training or experience the apprentice may have had or of his progress during the apprenticeship;
(e) the schedule of work processes, the theory and related instruction to be given, and the time to be spent on each unit;
(f) the provision of day release, or such other forms of release as may be appropriate, for attendance at a training institution;
(g) the examinations to be held during or on the expiry of the apprenticeship;
(h) the qualifications or certificates obtainable on completion of apprenticeship;
(i) any control of the number of apprentices necessary to ensure adequate training, avoid overcrowding in the occupation, and meet the manpower needs of the particular branch of economic activity concerned;
(j) the rate of remuneration payable to the apprentice and the scale of increases during the apprenticeship;
(k) the conditions of remuneration in case of absence through sickness;
(l) accident insurance;
(m) holidays with pay;
(n) the nature and extent of the supervision to be exercised over the apprenticeship, particularly with a view to ensuring that the rules governing the apprenticeship are observed, that the training is in keeping with established standards and that there is reasonable uniformity in the conditions of apprenticeship;
(o) the registration of apprentices and apprenticeship contracts with

appropriate bodies;

(p) the form and content of the apprenticeship contract.

52. Apprentices should receive comprehensive safety instruction so as to develop safe working habits in the use of tools and machinery and learn to observe general safety measures, taking into account new hazards as they arise.

53. (1) Entry into apprenticeship should in every case be preceded by comprehensive vocational guidance and by a medical examination related to the requirements of the occupation for which training is to be given.

(2) Where the occupation in view calls for special physical qualities or mental aptitudes, these should be specified and verified by special tests.

54. (1) It should be possible by agreement among all parties concerned to transfer an apprentice from one undertaking to another when this is considered necessary or desirable for the completion of his training.

(2) Where several types of apprenticeship exist, it should be possible by agreement among all parties concerned for an apprentice to transfer from one type to another when his aptitudes show that this would be to his advantage.

STATISTICAL SOURCES

As indicated in the general notes to this report, p. 199, the statistics have in most cases been drawn from official apprenticeship and education statistics published by public and semi-public bodies in the countries concerned.

The statistics are seldom comparable internationally, as too great a diversity exists between countries regarding the bases on which they have been established. An indication of this diversity, as it affects the eight countries, is to be found in the table overleaf which shows for each country the type of statistical information available on the characteristics and classifications of persons undergoing and completing vocational training.

These data have been taken from a paper prepared by the International Labour Office for the Joint Working Group on Statistics of Education of the Statistical Commission, the Economic Commission for Europe, UNESCO and the ILO, which met at Geneva in October 1965. (Statistical Commission and Economic Commission for Europe, Working Group on Statistics of Education, Statistics of vocational training in European countries, Geneva, ILO, documents Nos. Conf. Eur. Stats/WG/23/3 of 27 Aug. 1965 and Conf. Eur. Stats/WG/23/3/Add. 1 of 15 Sept. 1965).

The principal sources utilised have been listed, country by country, in the pages below. The list also contains other statistical sources, standard references as well as special statistical studies prepared on an ad hoc basis, which it is felt deserve special mention.

Statistical Information Available on Different Characteristics and Classifications of Persons in Vocational Training and Persons Completing Vocational Training in 8 European Countries

	Austria		Czechoslovakia		Denmark		France		Fed. Rep. of Germany		Netherlands		Switzerland		Great Britain		Northern Ireland[4]	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
I. Apprentices		xy	y						xy						xy		xy	xy
a. on the job			xy														x	xy
b. on the job/in schools or centres			xy						y				x				x	xy
With breakdown by private and public schools	1													x			x	xy
c. on the job/in school inside the formal school system	x								x				x				x	x
With breakdown by private and public schools	x													x				
b. + c. Form of education in school or centre																		
(i) Day release	x		y						xy					x			x	xy
(ii) Evening courses														x			x	y
(iii) Correspondence courses																		
II. Other young trainees in institutions outside the formal school system								y							xy		xy	x
a. employed								x										
b. not employed								x										
a. + b. Form of instruction																		
(i) Part-time courses								xy									x	y
(ii) Evening courses								xy										xy
(iii) Correspondence courses								xy										y
(iv) Full-time vocational school								xy									xy	
III. Persons under I and II by																		
(i) Sex	x		xy				xy		xy			xy			xy		xy	xy
(ii) Age groups			xy				xy				xy						xy	x
(iii) Industry	x		x[2]y[3]		x		xy					xy					xy	xy
(iv) Occupation			x[2]y[3]				xy		x		xy						xy	xy
(v) Level of skill					x		xy				xy						xy	x
(vi) Average duration of training							y		y			y					y	

Col. A - Data are collected
Col. B - Date may be collected
x - Persons in vocational training
y - Persons completing vocational training
1 - Data available relate to compulsory attendance at vocational schools
2 - Only for apprentices in apprenticeship schools
3 - Only for apprentices
4 - The statistics have a partial coverage. Indications in both columns A and B for the same item mean that incomplete statistics can be made complete.

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* esp. Anuario de estadisticas del trabajo
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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD)
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Paris, OECD, Statistical Bulletins, 1963, 140 p.

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* fr. Statistiques de main-d'œuvre 1950-1962

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NETHERLANDS

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Job descriptions, training syllabi, examination standards and many other documents consulted in the course of the study have not been listed.

Extensive use has been made of the global information coverage provided by CIRF Abstracts (Genève, CIRF Publications, ILO, 1961-).

Names of national bodies have been given in the language of the country, as have been the titles of the books, articles, periodicals and other documents listed. Place names have also been given in the language of the country in question.

Whenever a document or article is known to have been brought out in a language other than English, this information has been indicated, and the title has been repeated in the language(s) concerned.

With one exception, the European Economic Community, which does not have English as one of its official languages, international organisations have been referred to under their English title.

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* deutsch: Die Anpassung der innerhalb des Unternehmens erfolgenden Berufsausbildung an den aus der wirtschaftlichen, technischen und sozialen Entwicklung resultierenden Bedarf
ital.: L'adattamento della formazione professionale in sede aziendale con riguardo al fabbisogno derivante dal prevedibile sviluppo economico, tecnico e sociale
ned.: De aanpassing der binnen de onderneming plaatshebbende beroepsopleiding aan de behoefte, die voortvloeit uit de economische, technische en sociale ontwikkeling

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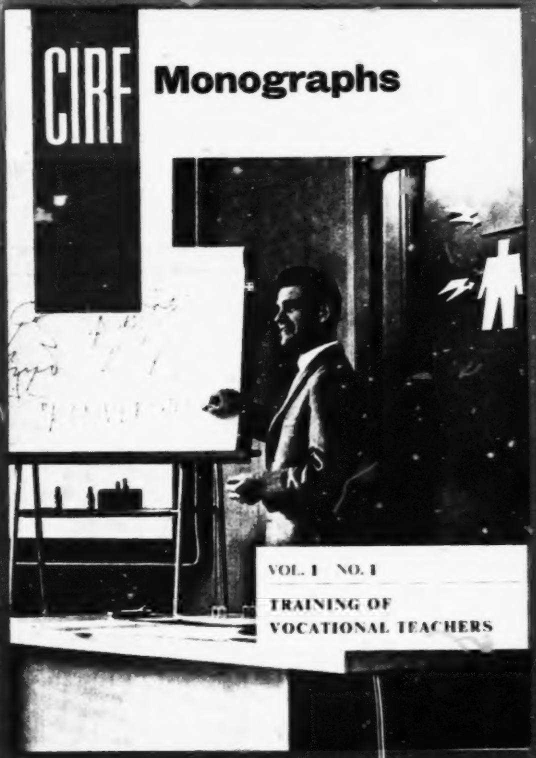
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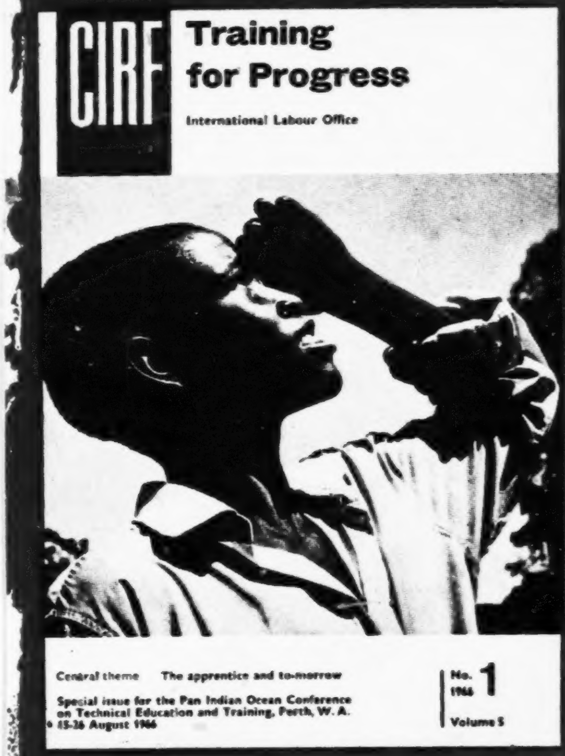
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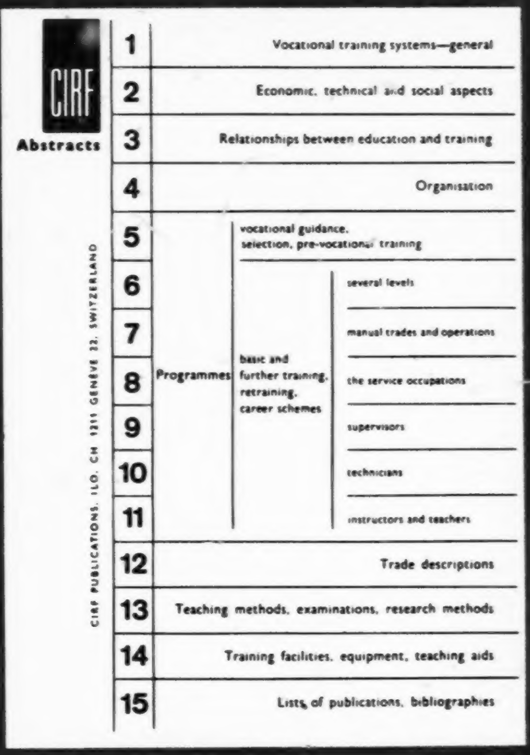
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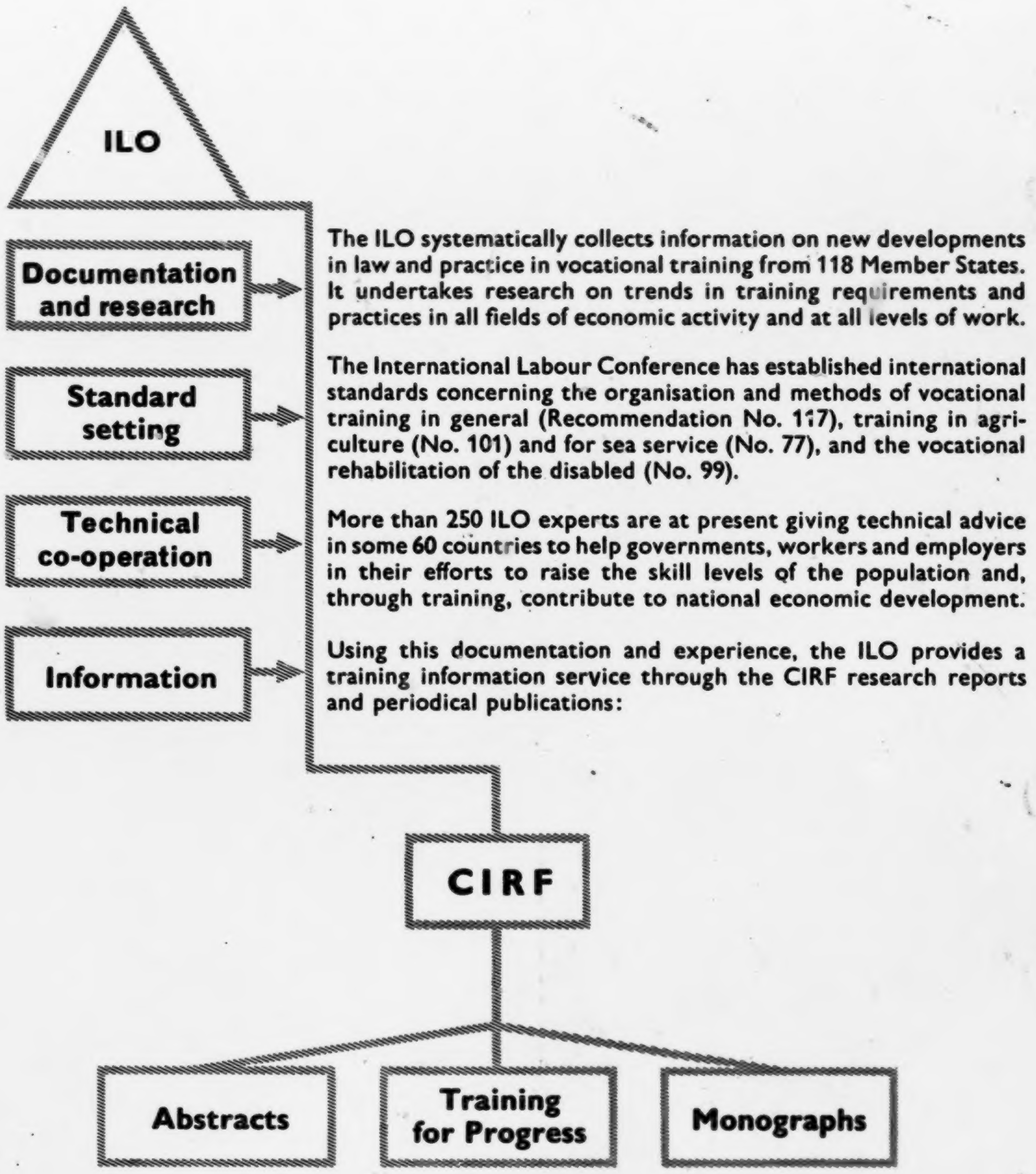
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